RLS & WNE CLIENT V6

RX8200 CONFIGURATION GUIDE

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REUTERS

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1 INTRODUCTION

The RX8200 Receiver is a component of the MPEG-4 AVC/ MPEG-2/DVB compliant range of Ericsson equipment designed for use by broadcasters and distributors of video, audio and data Services over satellite.

Figure 1 RX8200 Satellite Receiver

The Satellite Receiver interfaces directly to a Low-Noise Block (LNB) on a satellite dish and takes an intermediate frequency (IF) input in the band 950 - 2150 MHz (L-band). The unit can provide dc power and polarisation switching to the LNB.

The receiver can be tuned to a Reuters satellite channel frequency and polarisation. The input is down-converted via an LNB to provide an L-band input to the Receiver. The received Reuters satellite channel contains two services within the Receiver's demultiplexer. These are configured to select a single video Service (**R**euters **L**ive **S**ervice) and other audio/data (**W**orld **N**ews **E**xpress) components and present them at the receiver output(s).

In short, this receiver processes both **RLS** and **WNE** content for Reuters Broadcasting clients.

1.1 FRONT PANEL CONTROLS

The physical interface for the Front Panel consists of an alphanumeric LCD display, pushbuttons, and a status LED that can used to set-up and monitor the unit. User input is via six pushbuttons comprising four cursor pushbuttons: Left, Right, Up, and Down; and two edit control pushbuttons: Edit and Save.

Figure 2 RX8200 Front Panel Controls

Each pushbutton has an integral green LED except Save, which has an integral red LED. When lit these LEDs indicate to the User which pushbutton is currently active.

1.2 FRONT PANEL LEDS

Receiver status as follows:

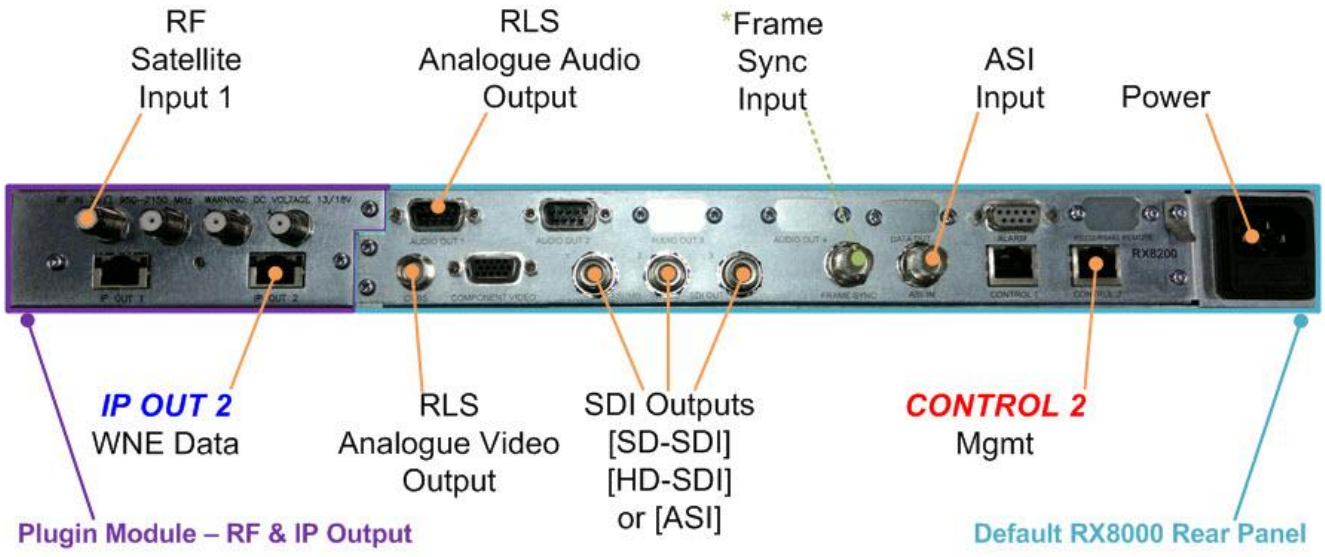
A **red** status LED is used to indicate an RX8200 Receiver fault condition, e.g. a missing or faulty input signal. It should be off for correct operation, although it may be lit briefly during power up.

An **orange** status LED is used to indicate that the RX8000 Receiver is locked to a Transport Stream, but also indicates incorrect conditions or incorrect system functioning.

A **green** status LED is used to indicate that the RX8000 Receiver is locked to a Transport Stream and also indicates correct conditions and correct system functioning.

2 RECEIVER INSTALLATION AND CABLE CONNECTIONS

Mount the RX8200 in a 19-inch standard rack in an MCR or CER that has an RF satellite feed to Reuters RLS/WNE.



*Frame Sync is not enabled by default on an RX8200. Please contact GCO and request a license is a client requires it.

Figure 3. Rear Connections On RX8200

2.1 RF CONNECTION

Connect an RF coaxial cable that is carrying the Reuters RLS/WNE satellite signal to **RF In 1** on the rear of the RX8200.

Figure 4. RF Connection on RX8200.

2.2 IP DATA AND MANAGEMENT CONNECTION

Connect the Ethernet 3 (*eth3*) network card of the WNE HPDL180 G6 server to the RX8200 (labelled *IP OUT 2*) using an ethernet cable for WNE IP Data.

Connect the Ethernet 1 (eth1) network card on the server to the management port (labelled *CONTROL 2*) on the RX8200 for management access. Figure 5 shows how these connections should be made between both devices.

NIC interfaces should be auto sensing so a standard straight ethernet cable is sufficient for a direct connection.

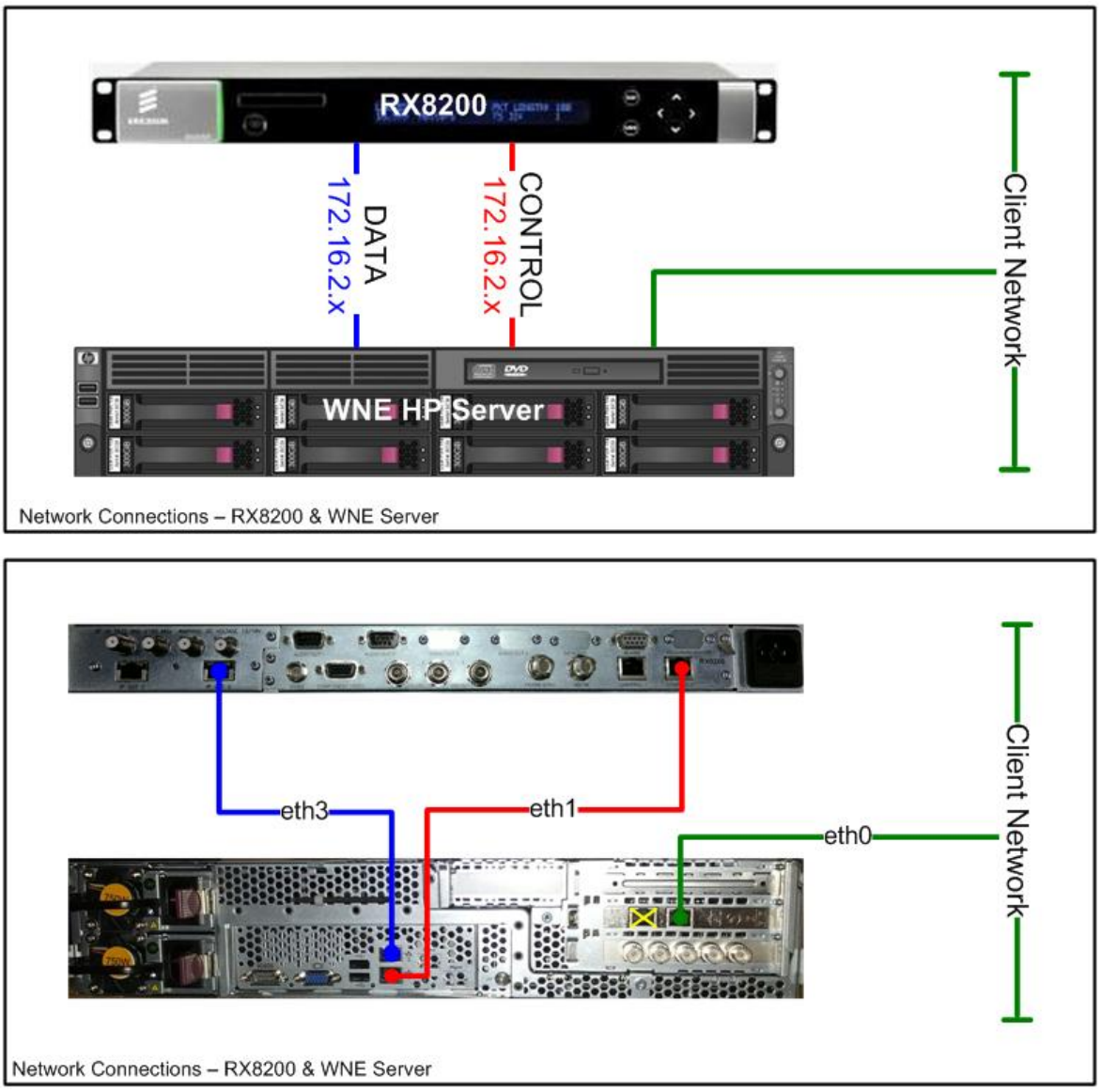


Figure 5. Network Cabling Connection Convention

2.3 MANAGEMENT ADDRESS CONFIGURATION

Default IP Address - 172.16.2.20

Configuration of this IP address must be configured on the front panel of the receiver. When this address change is applied, the WNE Server can be used to access the RX8200 browser page to complete the receiver configuration settings.

3 RECEIVER CONFIGURATION

3.1 SATELLITE PARAMETERS

Global satellite coverage for the WNE and RLS services are transmitted via the regional satellite providers listed below. You must ensure that your satellite dish is actually positioned to point to the relevant location.

The frequency of the LNB used in your installed satellite dish will also be required during the configurations that follow in this document.

	North America	Central America	South America
Satellite	Satmex 6	Satmex 6	Satmex 6
Video Standard	525 – NTSC / HD60	525 – NTSC / HD60	525 – NTSC / HD60
Position	113° West	113° West	113° West
D/L Frequency	12046.50 MHz (Ku-Band)	12046.50 MHz (Ku-Band)	12046.50 MHz (Ku-Band)
Symbol Rate	14.3 MS/s	14.3 MS/s	14.3 MS/s
FEC	3/5	3/5	3.5
Polarization	Horizontal	Horizontal	Horizontal
Roll Off	20%	20%	20%

Figure 6 Satellite coverage for North, Central and South America

	Europe	MEA	Asia
Satellite	SES-4	Amos 5	Asiasat 5
Video Standard	625 – PAL / HD50	625 - PAL	625 – PAL**
Position	22° West	17.0° East	100.5° East
D/L Frequency	11128.30 MHz (Ku-Band)	4119 MHz (C-Band)	3960 MHz (C-Band)
Symbol Rate	14.3 MS/s	7.2 MS/s	30.0 MS/s
FEC	3/5	3/4	5/6
Polarization	Horizontal	RH Circular	Horizontal
Roll Off	20%	35%	20%

Figure 7 Satellite coverage for Europe, MEA and Asia

* Argentina, Paraguay and Uruguay use a PAL-N variation but receive via satellite a 525 NTSC signal.
** Some countries in Asia like Japan, China, South Korea Philippines and some Pacific Island Nations use NTSC.

- Dual illumination of WNE & RLS on Asiasat 5 to commence from the 1st of November 2013 up until the 31st March 2014.
- Change of SES 4 frequency from 11653.7MHz to 11128.3MHz on 19th of January 2014.

All of these satellite paramaters exist in a series of preconfiguration files that can be found on a WNE server. These files are covered in Section 3.7.

Configuring the RX8200

The most efficient way to configure an RX8200 is by using its web-based management interface. It is also possible to configure most of the receiver functionality through the front panel menu control buttons which takes considerably longer to complete.

3.2 USING THE RECEIVER FRONT PANEL MENU SYSTEM

- The four arrow pushbuttons are used to navigate through the receiver menu system. Each arrow pushbutton backlight is illuminated when a further menu can be reached by pressing that pushbutton.
- The edit and save pushbuttons are used to modify User Settings within the menu system. The edit pushbutton backlight is illuminated when the current menu contains a User modifiable setting. To modify a User Setting within a menu, press the edit pushbutton and then use the up and down pushbuttons to change the User Setting. During this edit operation, both the edit and save pushbutton backlights will be illuminated. If a menu contains more than one modifiable User Setting then the left and right pushbuttons are used to select which User Setting will be edited. When a User Setting has been modified, the save pushbutton should be pressed to confirm and action this new User Setting.
- Configure the IP addresses of this receiver for access to the Management and IP Data network interfaces. Once the management IP address has been configured to the default Reuters address (172.16.2.20), the remainder of this receiver configuration can be done through its Internet browser page.

3.3 DEFAULT IP ADDRESS – FRONT PANEL CONTROL

The default IP addresses for the Management control should be configured manually through the front panel menu. The Management port called Control 2 (IP2) should be changed to a default IP address of 172.16.2.20. The Subnet address should remain as 255.255.255.0.

Management Control 2 – Menu 1.1.3

Figure 8. Control 2 Network Address

3.4 CONFIGURATION OF RX8200 ON RLS – FRONT PANEL CONTROL

If you wish to simplify the configuration process, skip to Section 3.7 for instructions on configuration through a web interface. The steps below are a manual process for configuring RLS only and do not set all WNE configuration paramaters.

- Go to Menu 3.2 and select RF INPUT 1. The Receiver can take its signals from four sources. Set-up source 1.
- Scroll to Menu 3.2.2.1. Enter the LNB FREQUENCY then press **Save**. This sets up the LNB frequency for the selected Source in MHz.
- Scroll to Menu 3.2.2.2. Enter the SATELLITE FREQUENCY then press **Save**. This sets up the Satellite frequency for the selected Source in MHz.
- Scroll to Menu 3.2.2.3. Enter the SYMBOL RATE then press **Save**. Sets the symbol rate for the selected Source in Msymbol/s.
- Scroll to Menu 3.2.2.4. Enter the DVB Modulation Standard then press **Save**. This sets up the DVB modulation Standard (DVB-S or DVB-S2). FEC detection is automatic. Currently, this is DVB-S for RLS.
- Scroll to Menu 3.2.2.7. Enter the SEARCH RANGE then press **Save**. This sets up the centre frequency Search Range for the selected Source in kHz. Set this value to 5000kHz.
- Scroll to Menu 3.2.2.10. Enter the LNB POWER as either On or Off and then press **Save**.

3.5 CONFIGURATION OF NETWORK ACCESS

Access to the RX8200 should be configured on a client site as shown in **Figure 5** above. The IP Data Output and Management LAN connections should be connected directly to the WNE Server. IP Data and Management functionality are completely separated on the RX8200 hence the requirement for separate network connections.

If a client environment requires multiple WNE server connections to a single RX8200 through a switch then every connected server will still require two individual connections as depected in **Figure 9** below. See Appendix 4 for a rear visual of network connections

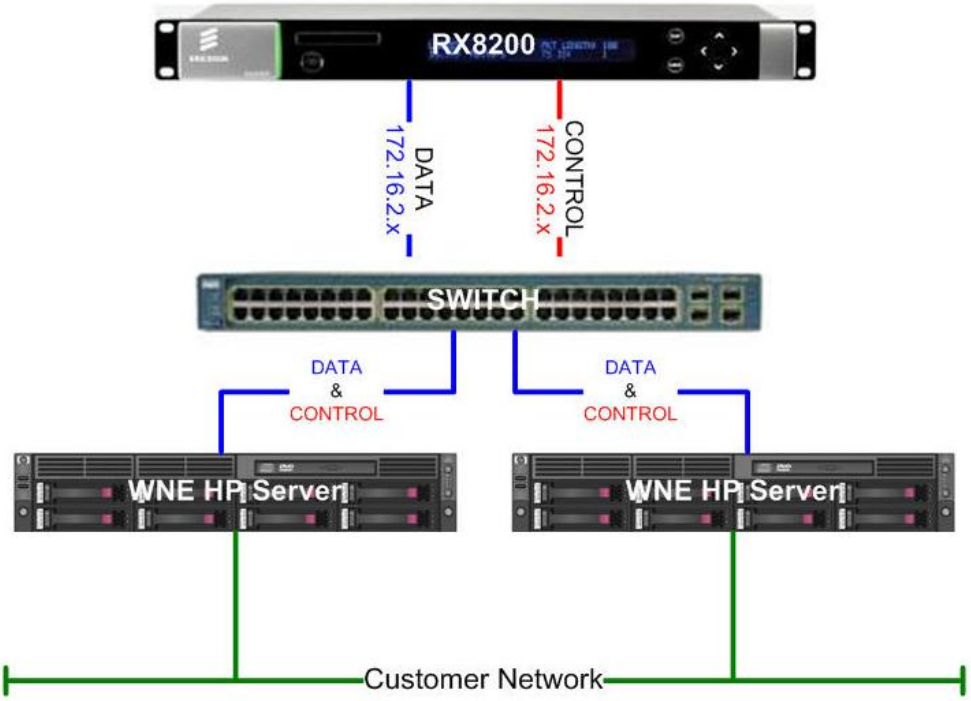


Figure 9. Multiple WNE Servers & Single RX8200

3.6 CONFIGURATION OF RX8200 ON RLS – BROWSER INTERFACE

Access the RX receiver through a browser window from the WNE server using its default IP address of http://172.16.2.20. With a correctly configured Management IP address, the default Status page of the RX8200 will be displayed.

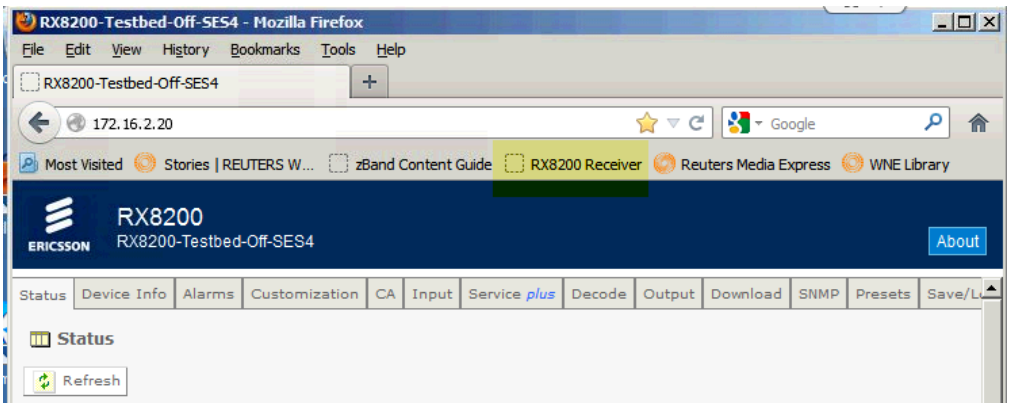


Figure 10 RX8200 Bookmarks Toolbar Shortcut

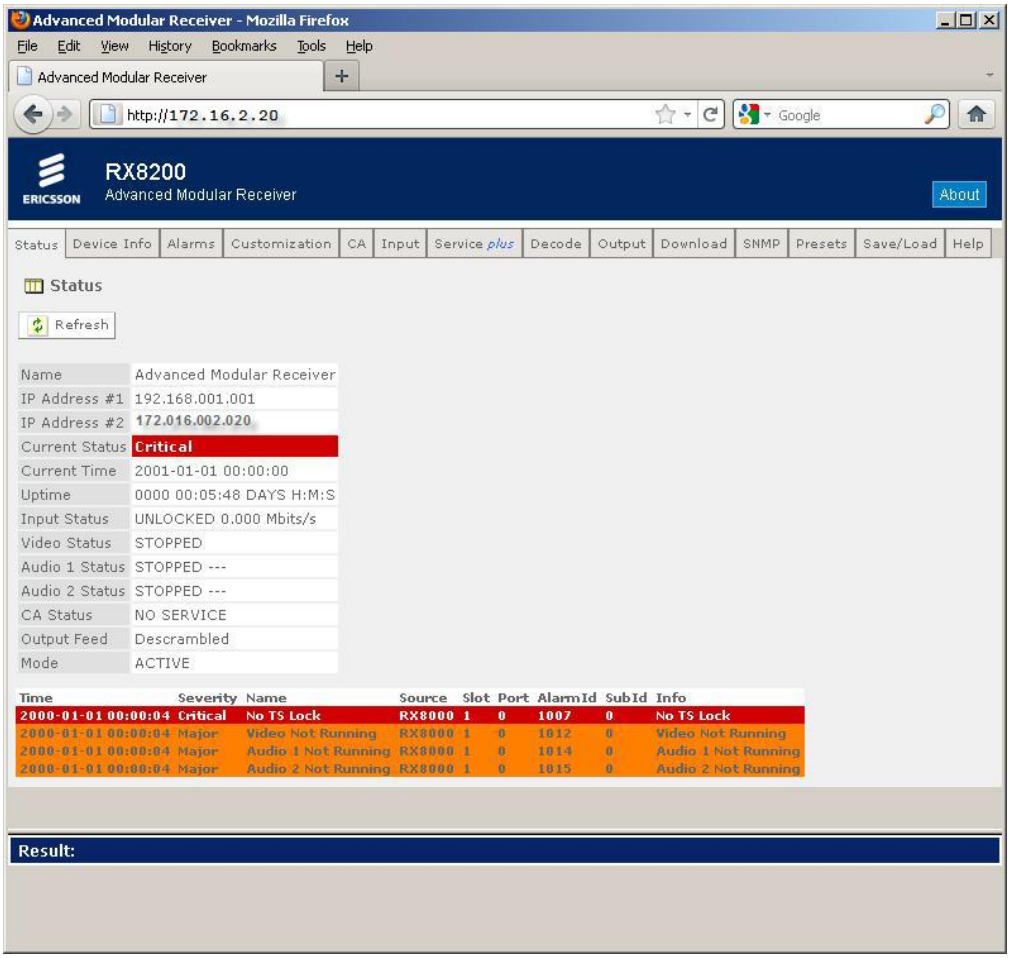

Advanced Modular Receiver - Mozilla Firefox
File Edit View History Bookmarks Tools Help
Advanced Modular Receiver
http://172.16.2.20
Google
ERICSSON
RX8200
Advanced Modular Receiver
About
Status Device Info Alarms Customization CA Input Service plus Decode Output Download SNMP Presets Save/Load Help
Status
Refresh
Name Advanced Modular Receiver
IP Address #1 192.168.001.001
IP Address #2 172.016.002.020
Current Status Critical
Current Time 2001-01-01 00:00:00
Uptime 0000 00:05:48 DAYS H:M:S
Input Status UNLOCKED 0.000 Mbits/s
Video Status STOPPED
Audio 1 Status STOPPED ---
Audio 2 Status STOPPED ---
CA Status NO SERVICE
Output Feed Descrambled
Mode ACTIVE
Time Severity Name Source Slot Port AlarmId SubId Info
2000-01-01 00:00:04 Critical No TS Lock RX8000 1 0 1007 0 No TS Lock
2000-01-01 00:00:04 Major Video Not Running RX8000 1 0 1012 0 Video Not Running
2000-01-01 00:00:04 Major Audio 1 Not Running RX8000 1 0 1014 0 Audio 1 Not Running
2000-01-01 00:00:04 Major Audio 2 Not Running RX8000 1 0 1015 0 Audio 2 Not Running
Result:

Figure 11. RX8200 Default Status – Not Configured

Alarm messages will be displayed on this *Status* page until all RLS and WNE configurations have been completed. Select the *Input* tab, then select *Input Source* and *Primary Input* as **SAT** and select *Apply Changes* to store this configuration.

To configure the receivers RLS and WNE satellite paramaters manually please see Appendix 3 for further information. To perform an automated configuration process, please see Section 3.7.

Configure the satellite input parameters for the client site. Please use the Global Satellite Coverage options in this document to determine the local settings required for your client region. Ask a client engineering representative for the frequency details of the LNB connected to their in-house satellite dish.

IMPORTANT NOTE:

RX8200 units that have been in storeage for some time will NOT have received upgrade licenses for HD and are unlikely to lock to the new satellite frequency on Asiasat 5 for clients in Asia. Please see Appendix 7 for details on how to apply an appropriate HD key manually.

3.7 AUTOMATED CONFIGURATION SCRIPT

A selection of automated xml scripts exist for an RX8200. These scripts can be uploaded via its web interface to preconfigure the receiver to one of the 4 global satellites carrying the RLS and WNE services.

A selection of these files currently exist on The Reuters Hub. For WNE servers that have been connected to a satellite signal for more than 24hrs, a zip file containing these files should also exist under **D:\Reuters_Engineering**.

A file called *All_RX8200-Satellite_Configuration_Files-v5.12.2.zip* should exist within this folder. The presence of *v5.12.2* or equivalent, will signify the latest production release of RX8200 firmware. This file should be extracted locally to the ***Reuters_Engineering*** folder.

Please note that these files will not be present on a newly connected WNE Server, unless it has been connected to the WNE Service for at least 24hrs.

Files are presented with common preset LNB values for each of the 4 satellites used to delivery content around the globe. The steps below will prompt an engineer to pick an appropriate configuration depending upon the LNB value on the client's satellite dish.

Navigate to the **Save/Load** tab and select the **Browse** button under the *Restore Configuration from File* section of the page.

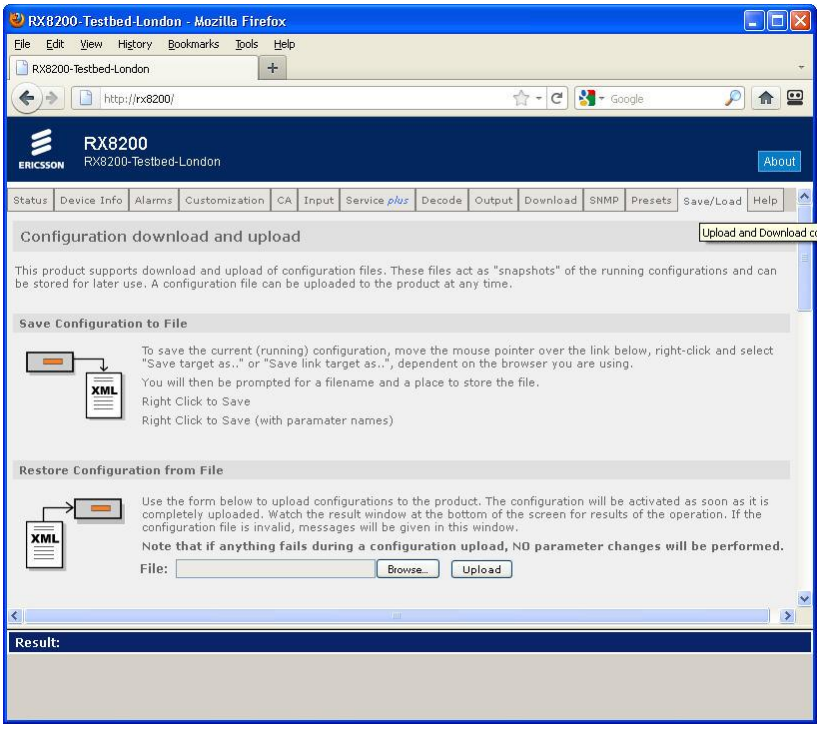

RX8200-Testbed-London - Mozilla Firefox
File Edit View History Bookmarks Tools Help
RX8200-Testbed-London
http://rx8200/
RX8200
RX8200-Testbed-London
About
Status Device Info Alarms Customization CA Input Service plus Decode Output Download SNMP Presets Save/Load Help
Configuration download and upload
This product supports download and upload of configuration files. These files act as "snapshots" of the running configurations and can be stored for later use. A configuration file can be uploaded to the product at any time.
Save Configuration to File
XML
To save the current (running) configuration, move the mouse pointer over the link below, right-click and select "Save target as.." or "Save link target as..", dependent on the browser you are using.
You will then be prompted for a filename and a place to store the file.
Right Click to Save
Right Click to Save (with paramater names)
Restore Configuration from File
XML
Use the form below to upload configurations to the product. The configuration will be activated as soon as it is completely uploaded. Watch the result window at the bottom of the screen for results of the operation. If the configuration file is invalid, messages will be given in this window.
Note that if anything fails during a configuration upload, NO parameter changes will be performed.
File: Browse... Upload
Result:

Figure 12. Configuration Download and Upload Tab

A Windows Explorer *File Upload* window should now open and prompt you to select an xml file. Select a file appropriate to your LNB value and geographical location.

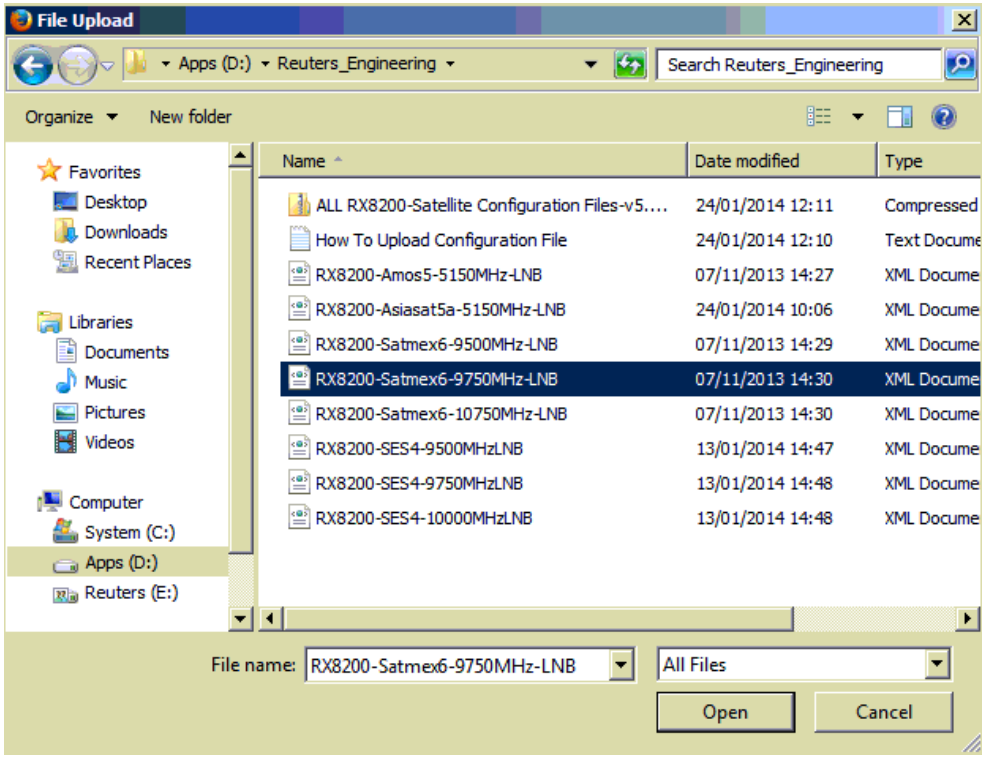


Figure 13. File Upload Tab

Example. If my site was the Reuters Bureau in London and a 9.75GHz LNB was installed on the satellite dish, then the appropriate file here would be for the satellite region under SES4 for Europe and 9750MHzLNB – (RX8200-SES4-9750MHzLNB.xml).

Once this is selected click on the *Upload* tab to apply this pre configuration file.

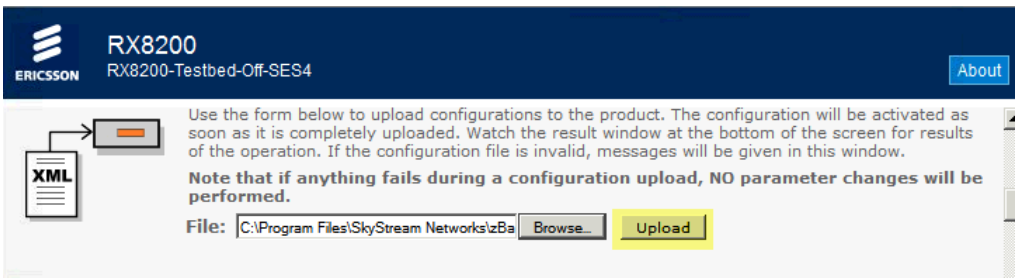

ERICSSON
RX8200
RX8200-Testbed-Off-SES4
About
XML
Use the form below to upload configurations to the product. The configuration will be activated as soon as it is completely uploaded. Watch the result window at the bottom of the screen for results of the operation. If the configuration file is invalid, messages will be given in this window.
Note that if anything fails during a configuration upload, NO parameter changes will be performed.
File:
C:\Program Files\SkyStream Networks\zBa
Browse...
Upload

Figure 14. Upload Preconfiguration File

Once the file has been successfully uploaded a *Result: SUCCESS* message will be displayed at the bottom of the browser page and the receiver Status should display as OK in green.

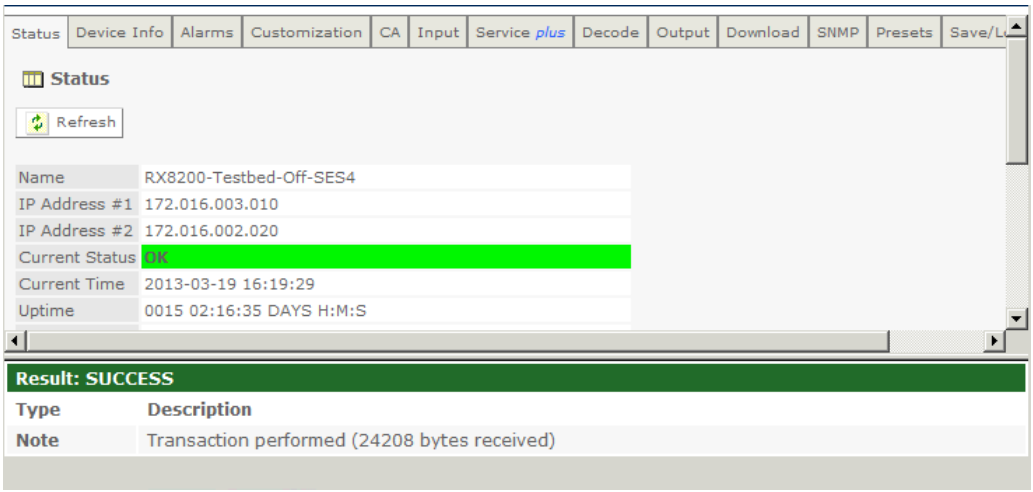


Figure 15. Successful Upload of Configuration File

3.8 DEFAULT SERVICE PRESET

Now that the receiver has been correctly configured to the RLS Service (which includes the WNE IP Data PIDs) the Service must now be stored for default startup.

Select the *Presents* tab and assign the locked Reuters service to Present Number 1. Enter the number 1 in the *Save Preset Number* window and select Apply Changes.

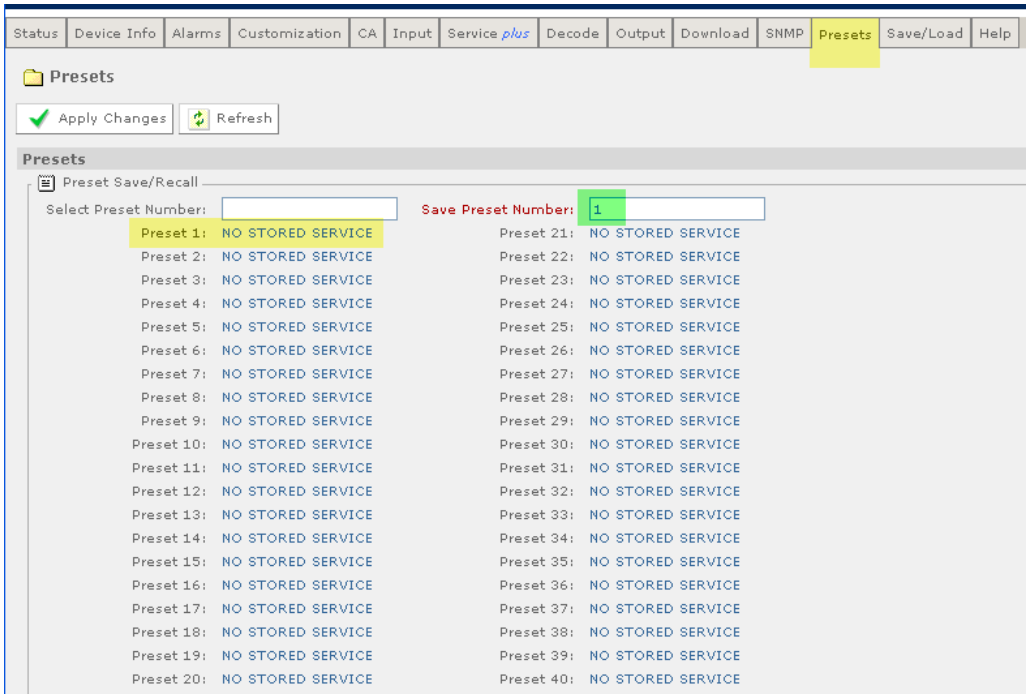


Figure 16. Empty Presets

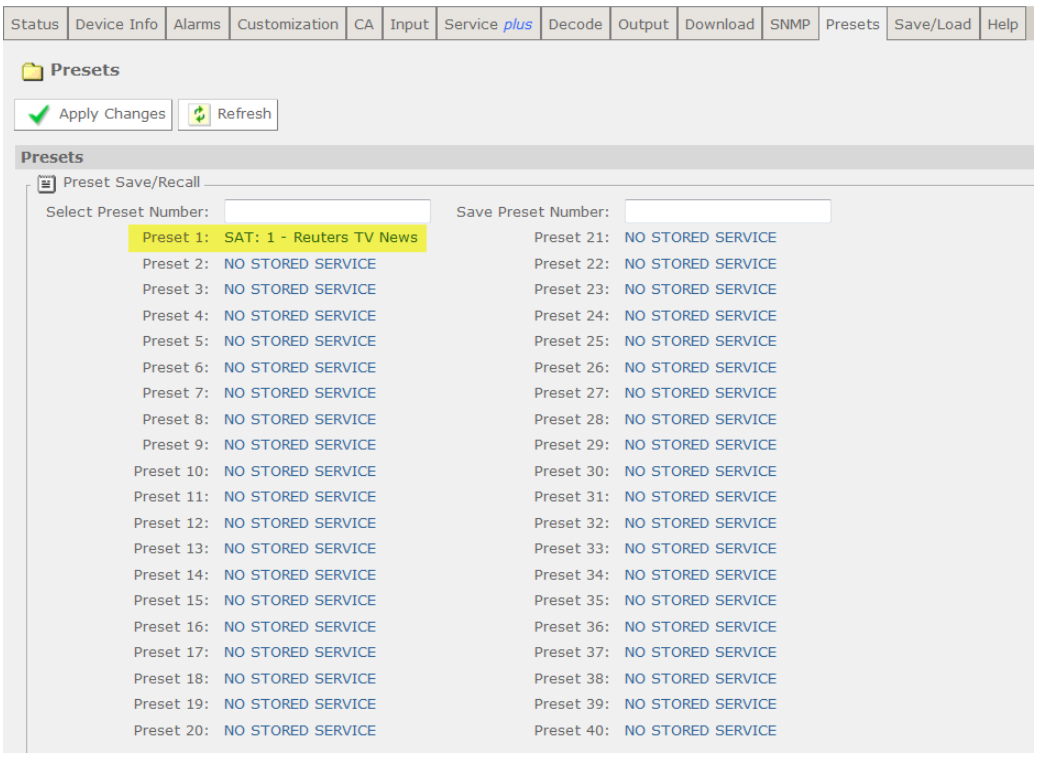


Figure 17. Channel 1 Preset Stored

3.9 RECORDING THE MAC ADDRESS

As with the old EMR satellite receiver, an RX8200 receiver also needs its MAC address recorded and provided to the GCO team in London. The physical MAC address is located under the Output Menu under IP Out 2.

All MAC addresses will be 12 digits long. Please record this value accurately as it is used to control client permissions.

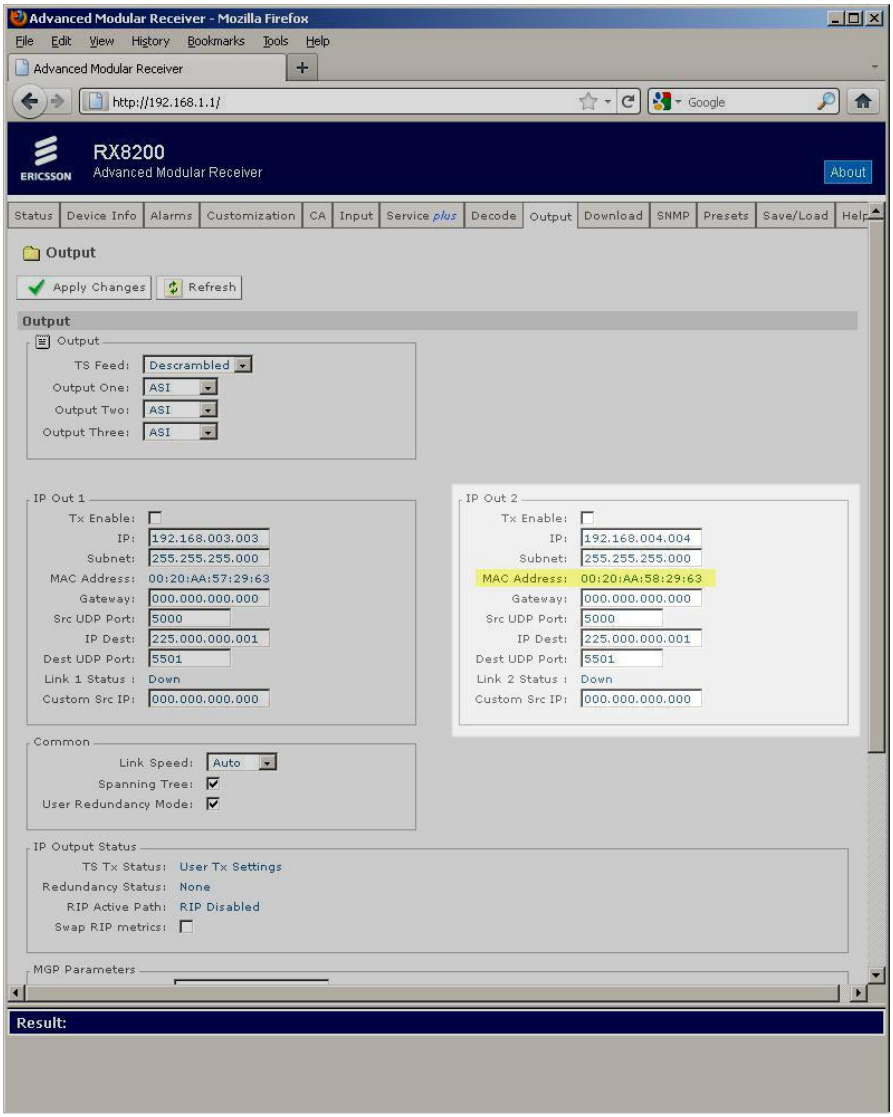


Figure 18. Location of RX8200 MAC Address for IP Output 2

The MAC address can also be seen on the front panel menu.

Figure 19. RX8200 MAC Address for IP Output 2 On Front Panel Display

MAC Address examples of **00-20-AA-58-29-63** are shown above.

3.10 RECORDING THE UNIQUE HARDWARE ID

The Unique Hardware ID is required by GCO in London to control the encryption permissions for Reuters RLS content. This information must be accuractly recorded and given to the GCO team in London.

The Hardware ID can be found in one of two locations on an RX8200. On the web management interface as shown below under the Customization tool.

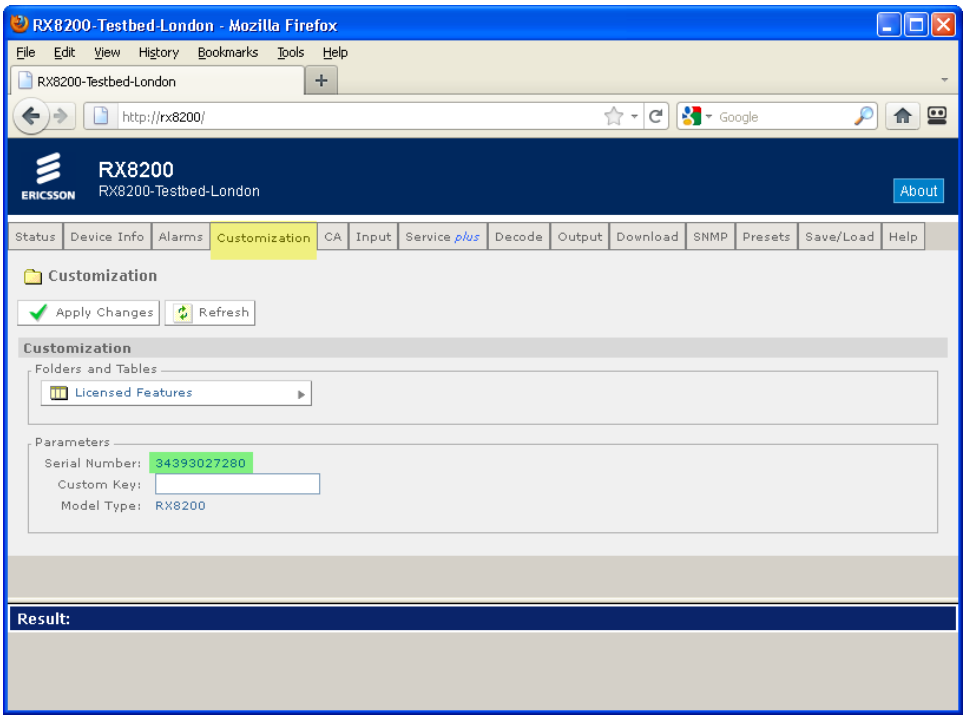


Figure 20. Unique Hardware ID

The Hardware ID can also be seen on the front panel display of the RX8200 under menu option 5.2.3

Figure 21. Unique Hardware ID On Front Panel Display

3.11 SAVING A CONFIGURATION FILE

The RX receiver automatically saves each configuration setting as an active profile setting. It is possible to store a configuration as an xml file that can be used to restore an RX8200 receiver for any client site. Browse to the *Save/Load* tab.

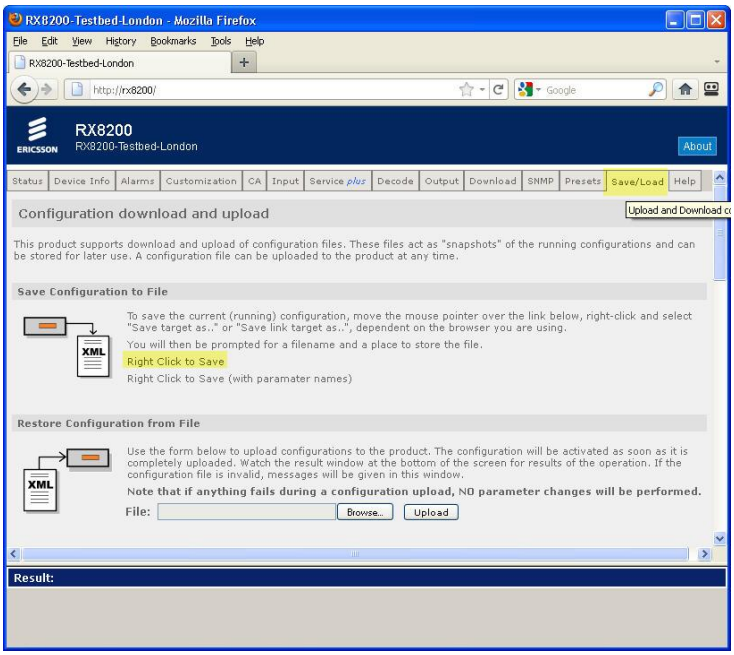

RX8200-Testbed-London - Mozilla Firefox
File Edit View History Bookmarks Tools Help
RX8200-Testbed-London
http://rx8200/
RX8200
RX8200-Testbed-London
About
Status Device Info Alarms Customization CA Input Service plus Decode Output Download SNMP Presets Save/Load Help
Configuration download and upload
This product supports download and upload of configuration files. These files act as "snapshots" of the running configurations and can be stored for later use. A configuration file can be uploaded to the product at any time.
Save Configuration to File
To save the current (running) configuration, move the mouse pointer over the link below, right-click and select "Save target as.." or "Save link target as..", dependent on the browser you are using.
You will then be prompted for a filename and a place to store the file.
Right Click to Save
Right Click to Save (with paramater names)
Restore Configuration from File
Use the form below to upload configurations to the product. The configuration will be activated as soon as it is completely uploaded. Watch the result window at the bottom of the screen for results of the operation. If the configuration file is invalid, messages will be given in this window.
Note that if anything fails during a configuration upload, NO parameter changes will be performed.
File:
Browse...
Upload
Result:

Figure 22. Save RX8200 Configuration File

Under the *Save Configuration to File* section *Right Click* to save the settings entered in the satellite receiver.

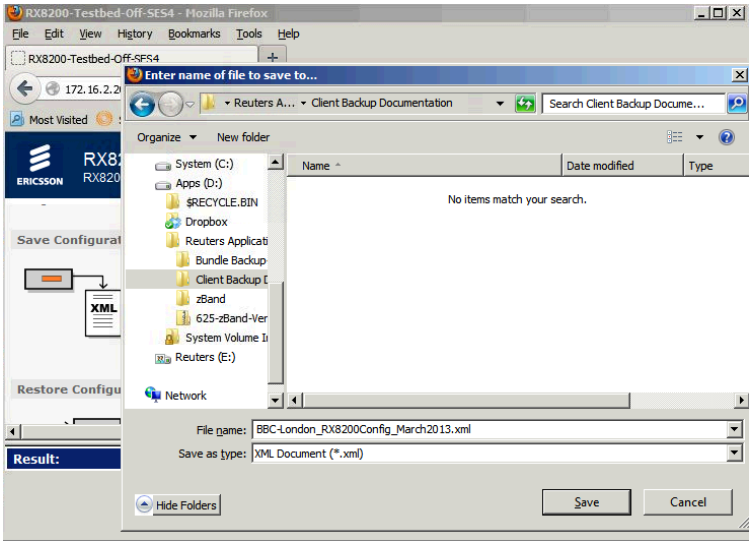


Figure 23. Example of Configuration Naming Convention

Create a logical name for this configuration file e.g. *<client name>_<Configuration Type>_<Date>.xml.* This configuration can be saved to (D:\Reuters Applications\Client Backup Documentation) locally on the WNE Server

A Reuters Engineer may wish to take a copy of this for their own client records.

3.12 RESTORING A CONFIGURATION FILE

From the *Save/Load* configuration tab on the RX8200 interface, select the Browse option under *Restore Configuration from file* and locate the appropriate xml configuration file. Once selected, click on the *Upload* button to apply the configuration.

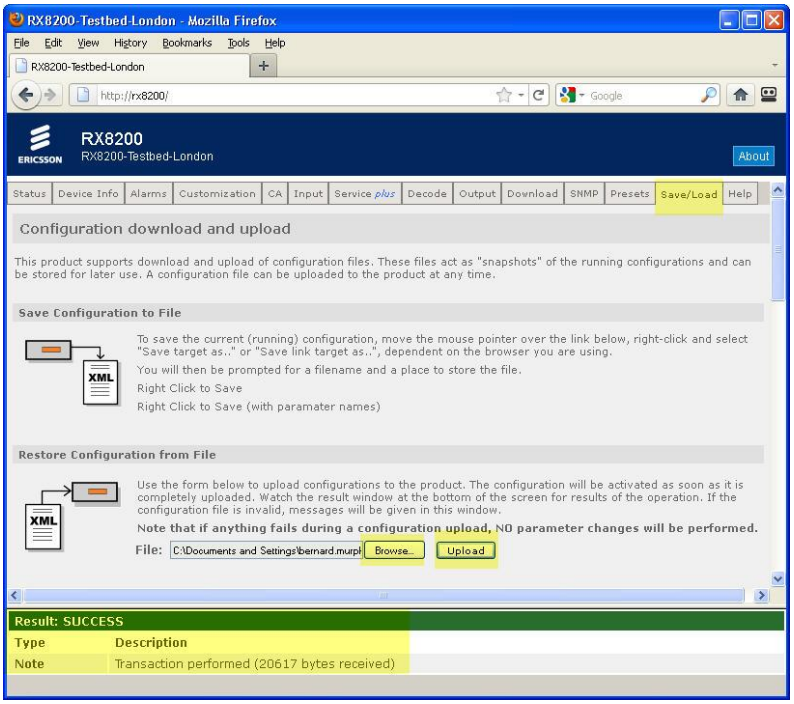

RX8200-Testbed-London - Mozilla Firefox
File Edit View History Bookmarks Tools Help
RX8200-Testbed-London
http://rx8200/
RX8200
RX8200-Testbed-London
About
Status Device Info Alarms Customization CA Input Service plus Decode Output Download SNMP Presets Save/Load Help
Configuration download and upload
This product supports download and upload of configuration files. These files act as "snapshots" of the running configurations and can be stored for later use. A configuration file can be uploaded to the product at any time.
Save Configuration to File
To save the current (running) configuration, move the mouse pointer over the link below, right-click and select "Save target as.." or "Save link target as..", dependent on the browser you are using.
You will then be prompted for a filename and a place to store the file.
Right Click to Save
Right Click to Save (with paramater names)
Restore Configuration from File
Use the form below to upload configurations to the product. The configuration will be activated as soon as it is completely uploaded. Watch the result window at the bottom of the screen for results of the operation. If the configuration file is invalid, messages will be given in this window.
Note that if anything fails during a configuration upload, NO parameter changes will be performed.
File:
Browse...
Upload
Result: SUCCESS
Type
Description
Note
Transaction performed (20617 bytes received)

Figure 24. Confirmation of Configuration File Upload

Once the configuration file has been accepted you'll see a Result SUCCESS notification at the bottom of the browser window.

3.13 RESET TO FACTORY DEFAULTS

To clear current configuration settings, either overwrite an existing configuration profile or reset the configuration parameters.

The reset can be done under the *Device Info* page and does not reset the IP address. Select the *Reset Parameters to Factory Defaults.* This reset does not change either of the CONTROL IP addresses.

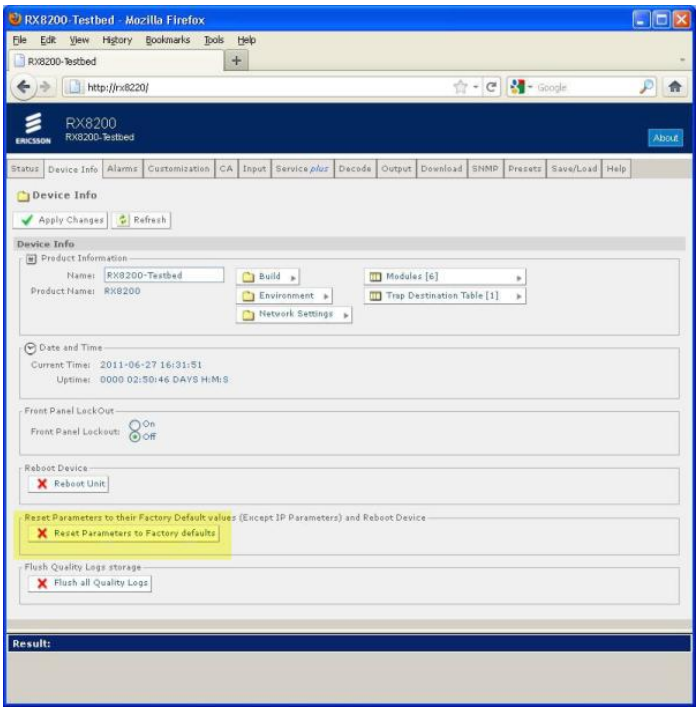


Figure 25. Reset Factory Defaults

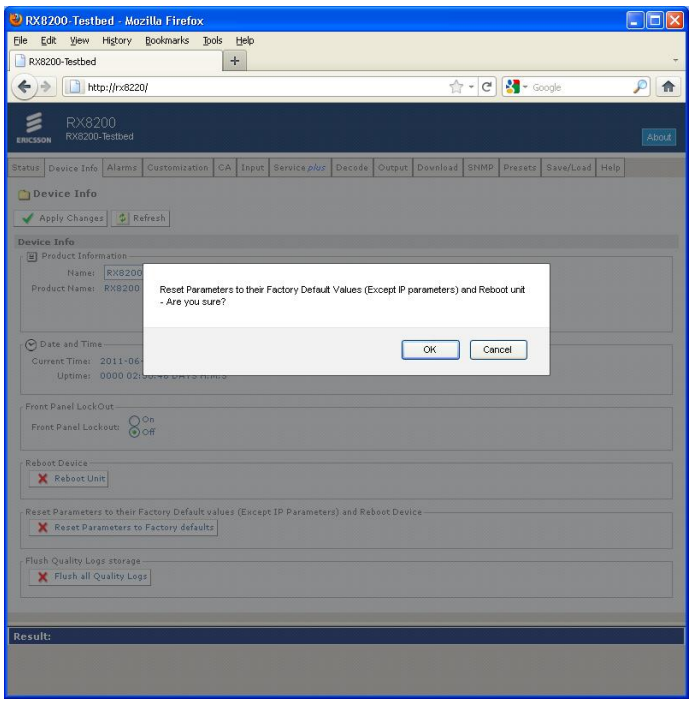

RX8200-Testbed - Mozilla Firefox
Reset Parameters to their Factory Default Values (Except IP parameters) and Reboot unit - Are you sure?
OK
Cancel

Figure 26. Confirm Factory Reset

4 TROUBLESHOOTING

4.1 UNABLE TO LOCK TO THE WNE SIGNAL

Items to verify:

- Confirm that the Input source is selected as SAT (for satellite feed) as shown in **Figure 36** in Appendix 3. Also ensure that the Primary Input is configured as SAT.
- Confirm the receiver is Enabled for 8PSK as outlined in Appendix 8. Apply an appropriate HD License key if required, reboot and retry.
- Confirm that you've selected the correct multicast address to filter WNE Data as shown in **Figure 39** in Appendix 3.
- Verify the LNB values that have been entered (refer to **Figure 38** in Appendix 3). Several WNE installations have uncovered a different LNB value when examined by an engineer. For example, if it is believed that a 10GHz LNB is installed, try altering the L-Band frequency value by ± 500MHz. Popular LNB values tend to be 9.5GHz, 9.75GHz, 10GHz, and 10.5GHz.
- Check the quality of the RF coaxial cable connecting to the RX8200. The F connector is a coaxial RF connector commonly used for "over the air" terrestrial television, cable television and universally for satellite television and cable modems, usually with RG-6/U cable or, in older installations, with RG-59/U cable.

4.2 NOT GETTING IP DATA FROM WNE

- Is the IP Output Port enabled as shown in Figure 14. IP data will not be output from the RX receiver until this port is enabled.
- Check that the physical ethernet cable is connected to Port 2 and not Port 1
- Check that the MPE Enable check box is enabled under the Decode tab and item MPE as shown in **Figure 40** in Appendix 3.
- Can you ping Port 2? Open a command prompt and ping 172.16.2.2. If not, then the issue lies with either the cable used to connect to the receiver or there is an issue with the network connection.
- Have you tried rebooting either the WNE Server and/or the RX8200 decoder? This often serves to reset network card interfaces.
- Check the RX8200 firmware version. This can be seen from the front panel of the receiver under menu item 1.2.1
-

Figure 27. RX8200 Firmware Version

- Firmware version v5.12.2 is the latest version (at the time of writing) that should be installed on all RX units. If an earlier version of firmware (e.g. v5.2.4 or v5.11.3) is installed then upgrading to v5.12.2 could resolve IP data reception problems particularly if an installation is running through a network switch. See Appendix 6 for instructions on how to perform an upgrade.

5 FAQS

5.1 HOW DO I SET ASPECT RATIO 16:9 & 4:3

The RX8200 is set by default to output RLS video as it is presented to the device. All Reuters RLS content is delivered at 16:9 material. To change this to output in 4:3 select the *Advanced* option under the Decode tab.

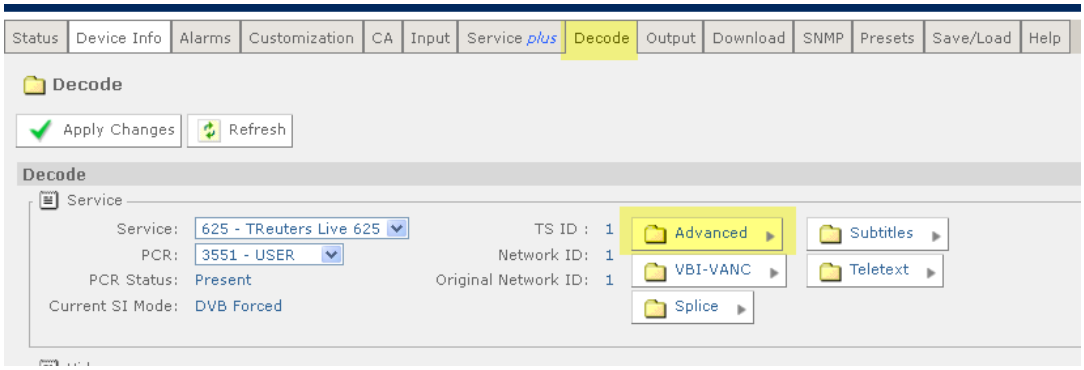


Figure 28. Advanced Video Settings for Aspect Ratio

Select the drop down list for *Screen Aspect Ratio* and select your desired output option and ensure to select the *Apply Changes* button at the top left of the browser screen.

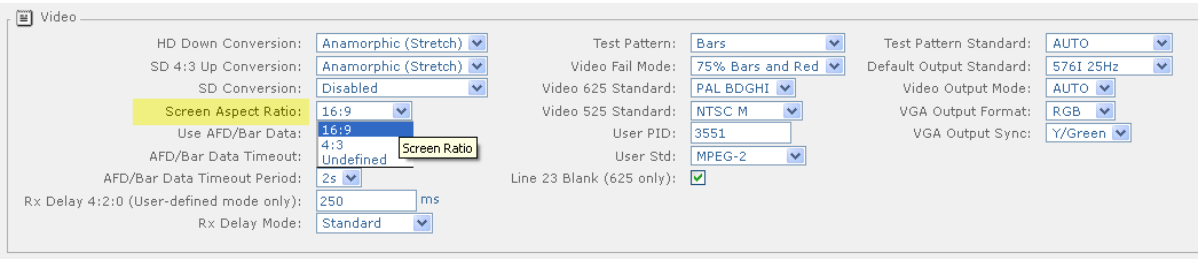

Video
HD Down Conversion: Anamorphic (Stretch)
SD 4:3 Up Conversion: Anamorphic (Stretch)
SD Conversion: Disabled
Screen Aspect Ratio: 16:9
Use AFD/Bar Data: 16:9
AFD/Bar Data Timeout: 4:3
AFD/Bar Data Timeout Period: Undefined
Rx Delay 4:2:0 (User-defined mode only): 250 ms
Rx Delay Mode: Standard
Screen Ratio
Test Pattern: Bars
Video Fail Mode: 75% Bars and Red
Video 625 Standard: PAL BDGHI
Video 525 Standard: NTSC M
User PID: 3551
User Std: MPEG-2
Line 23 Blank (625 only):
Test Pattern Standard: AUTO
Default Output Standard: 576I 25Hz
Video Output Mode: AUTO
VGA Output Format: RGB
VGA Output Sync: Y/Green

Figure 29. Screen Aspect Ratio

5.2 CAN THE RX8200 BE CONFIGURED TO TAKE AN ASI INPUT INSTEAD OF RF?

Yes it can. The RX8200 can be given either an RF or an ASI input. To change to an alternative input, select the Input tab and select the drop down tab for *Input Source* to select, ASI, SDI or Auto. Remember to choose the ApplyChanges tab to confirm the selection.

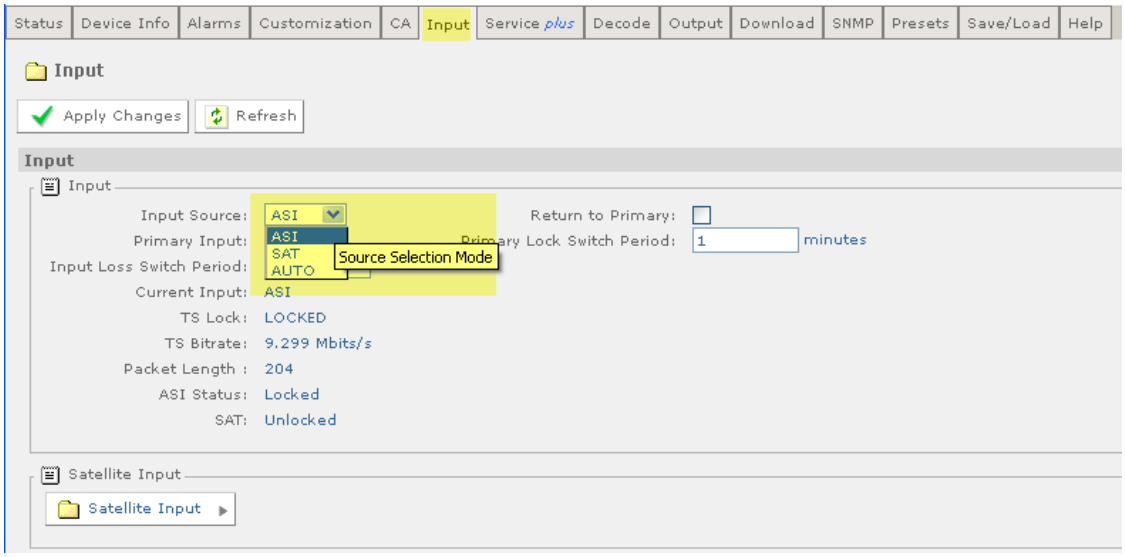


Figure 30. ASI Input

5.3 WHAT TYPE OF LNB SHOULD BE USED ON A SATELLITE DISH FOR RECEIVING WNE?

The Reuters recommended specifications for each type of LNB (KU and C Band) are listed below:

K_U Band

SMW LNB Single - Swedish Microwave - http://www.smw.se/

Figure 31. A Light Single Ku Band LNB

C Band

C-Band & Ku-Band Digi-Ready LNBs – California Amplifier - http://www.calamp.com/

Figure 32. *Extended C-Band Professional II LNB*

APPENDIX 1 RX8200 MAC ADDRESS

1.1 MAC ADDRESS CHANGE – REPLACING AN EMR RECEIVER WITH AN RX8200.

The onsite client scenario will be as follows.

1. Existing client installed with a configured EMR satellite receiver. The MAC address (Ethernet 2) of the EMR is being used for encryption and decryption of video files arriving on the WNE PC/Server.
2. WNE software scans for the MAC address on the EMR and confirms that this is the correct MAC address for this client installation.
3. During the swap out process the RX8200 receiver will replace the EMR and a new MAC address will be seen by the WNE software.
4. Once the RX8200 starts to receive new WNE files, no new video content will be decrypted until the new MAC address of the RX8200 is passed to the ICA Team in London so that the client records can be updated. Please note that a restart of the WNE Software (i.e. the Reuters WNE File Processor) is required at this time.
5. Correct detection of the new MAC address can be confirmed by selecting the About tab on a WNE browser interface.

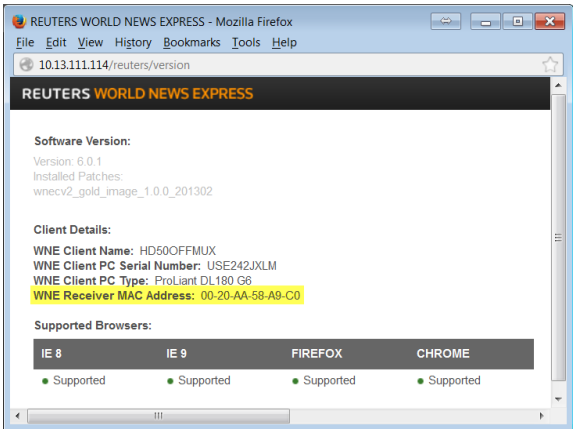


Figure 33 WNE About Tab

6. The MAC Address can be found from the front panel display of the RX8200 unit under menu 6.5.3.

Figure 34 RX8200 WNE Data MAC Address

7. Record this MAC Address and inform ICA as soon as possible of this change – no new video will be decrypted until this change is implemented.
8. Is it possible that you've changed some configuration values during this installation and forgotten to select *Apply Changes* on the browser page?

1.2 GCO CONTACTS

The generic email address for GCO in London is - globalcustomeroperations.newsagency@thomsonreuters.com

The GCO Team: Office Hours – 8am – 6pm GMT – Monday-Friday

Ms Alison Langley - TV Sales Coordinator - +44 (0).20.7542.9823 - alison.langley@thomsonreuters.com

TV Support London (Outside GCO Hours**):** 7 Days a Week

8am-7pm & 8pm 7am - +44 (0).20.7542.4709

Figure 35

APPENDIX 2 MANUAL CONFIGURATION

Manual Configuration of the RX8200 to lock to RLS and WNE. The screen shot examples below show a different default management IP address. Please ensure you are using a 172.16.2.20 IP address for Control 2 management interface.

Please also note that the following screen shots may not be identical to the RX8200 unit to hand as different firmware versions of the unit have additional menu options.

Configuration of the RLS Service paramaters must be configured first.. Select the **Input** tab on the RX8200 browser interface

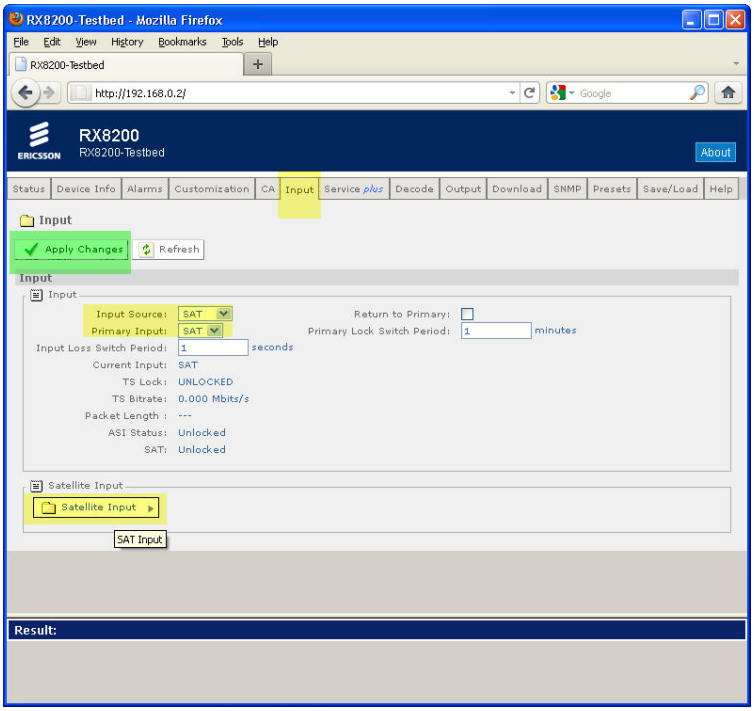


Figure 36. Satellite Input

Select the *Satellite Input* tab at the bottom of the browser page.You will now see a list of the L-band inputs. The RF signal from the satellite dish should be connected to Input 1 as shown in section 2.2 of this document.

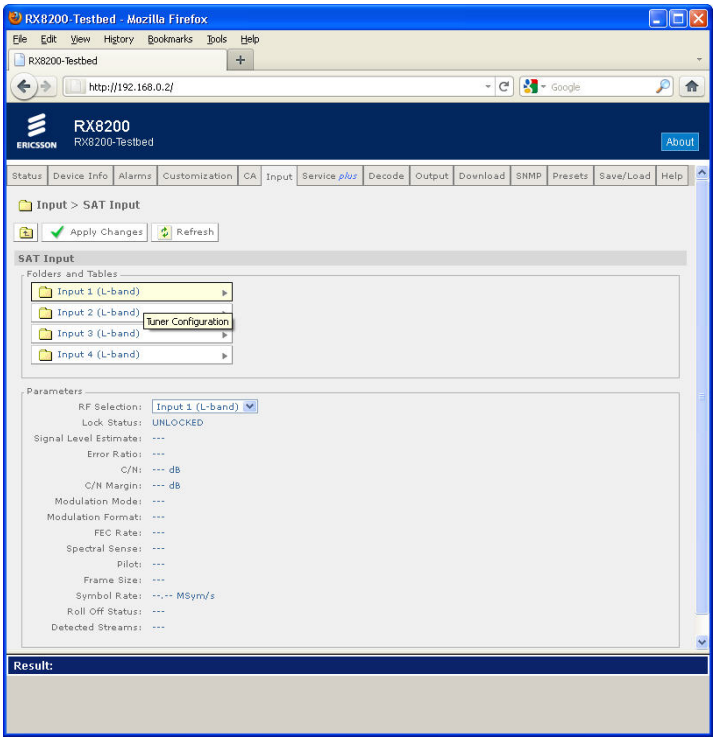


Figure 37. Satellite Input Screen

Configure the satellite input parameters for the client site. Please use the Global Satellite Coverage options in this document to determine the local settings required for your client region. Ask a client engineering representative for the frequency details of the LNB connected to their in-house satellite dish.

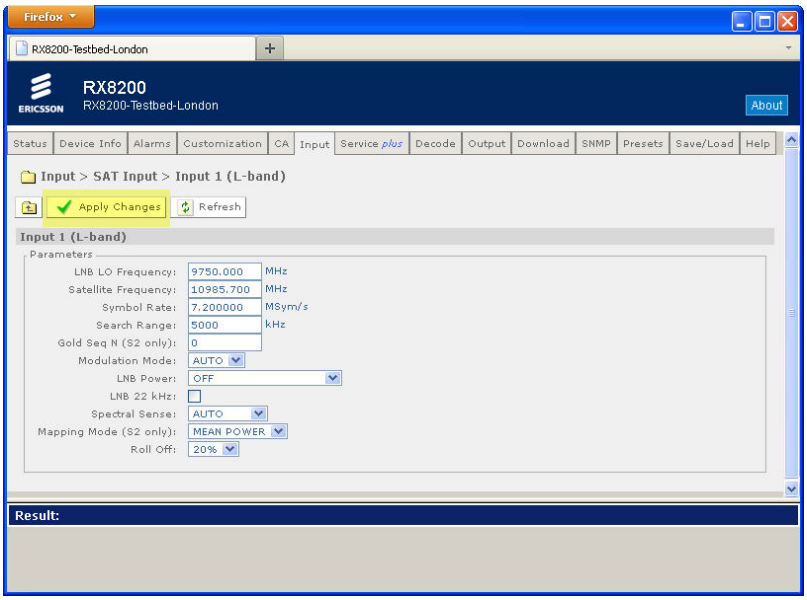


Figure 38. L-band Input 1 Configuration

When all the configuration parameters have been entered click on the *Apply Changes* tab to ensure the settings are saved. The receiver should now be tuned into the RLS service and the Front Panel LED of the RX8200 should have changed to an Orange colour. This will also be reflected on the home Status page of the receiver. If at this point, you are not able to lock to a new satellite signal, ensure you have the appropriate features enabled as outlined in Appendix 7.

For WNE, two multicast IP addresses exist to distinguish between PAL/625 and NTSC/525 on Reuters WNE (i.e.), each broadcast stream exists on a separate multicast address.

These addresses are provided below:

Standard	IP Address	MAC Address Hexadecimal
525/HD60	224.14.14.**14**	01:00:5E:0E:0E:**0E**
625/HD50	224.14.14.**15**	01:00:5E:0E:0E:**0F**

Figure 39. Multicast Addresses on WNE

To configure the transmission standard specific to your region, navigate to the *Decode* tab of the RX receiver browser page.

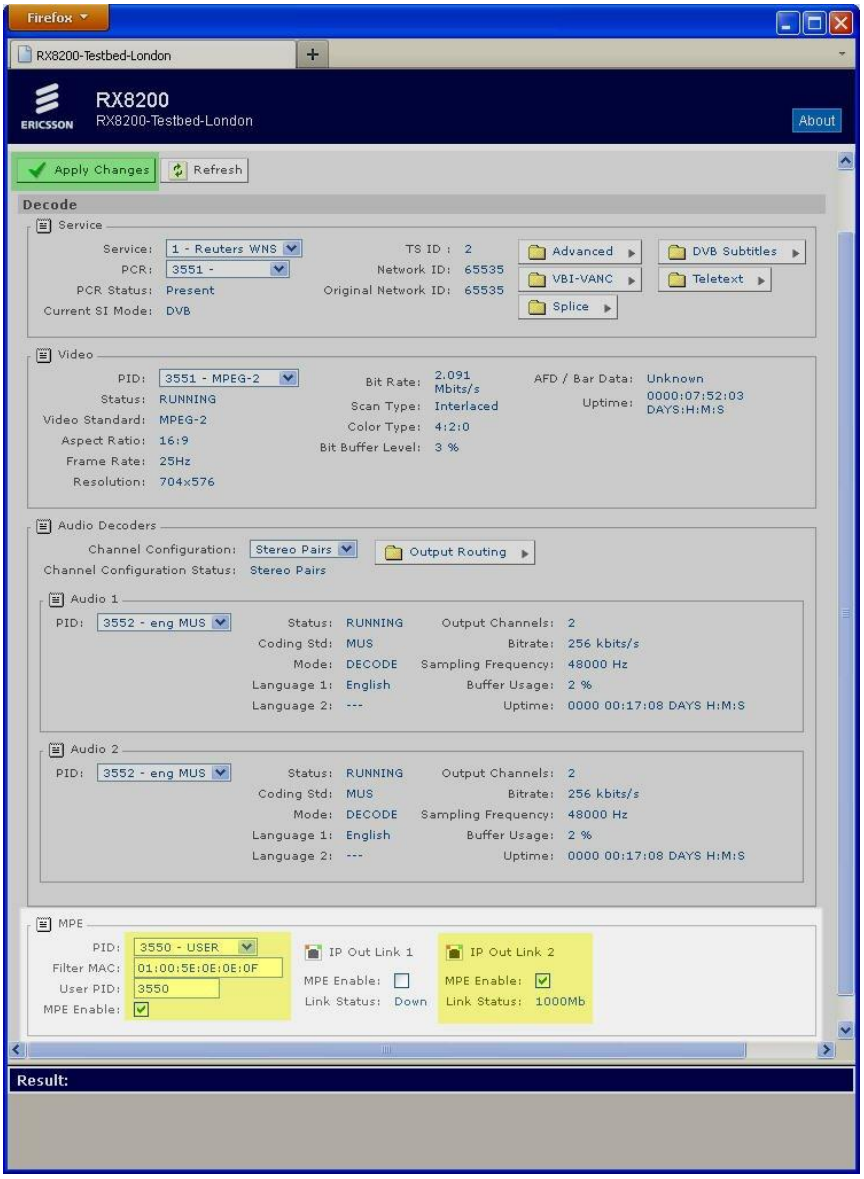


Figure 40. Configuring Multicast MAC Address and PID

Within the **MPE** section, make sure the following information is included:

- *PID:* – From the drop down tab, the PID 3550 – USER should be available once the receiver is tuned into RLS. If not then it will appear after the User PID has been selected and the changes applied to the receivers configuration.
- *Filter MAC:* - Enter the MAC address as shown in **Multicast Address** graphic above for your region.
- *User PID:* - 3550
- *MPE Enable:* - Select this box.
- Also ensure that the *MPE Enable* tick box is enabled for **IP Out Link 2** and then click *Apply Changes* to store this configuration.

To change the IP Output 2 address select the *Output* tab. As this network Interface directly connects to the WNE Server the IP address convention used globally is 172.16.2.2.

Ensure the *Tx Enable* tab remains deselected. A tick mark should not be displayed in the Tx Enable box as shown in the graphic below.

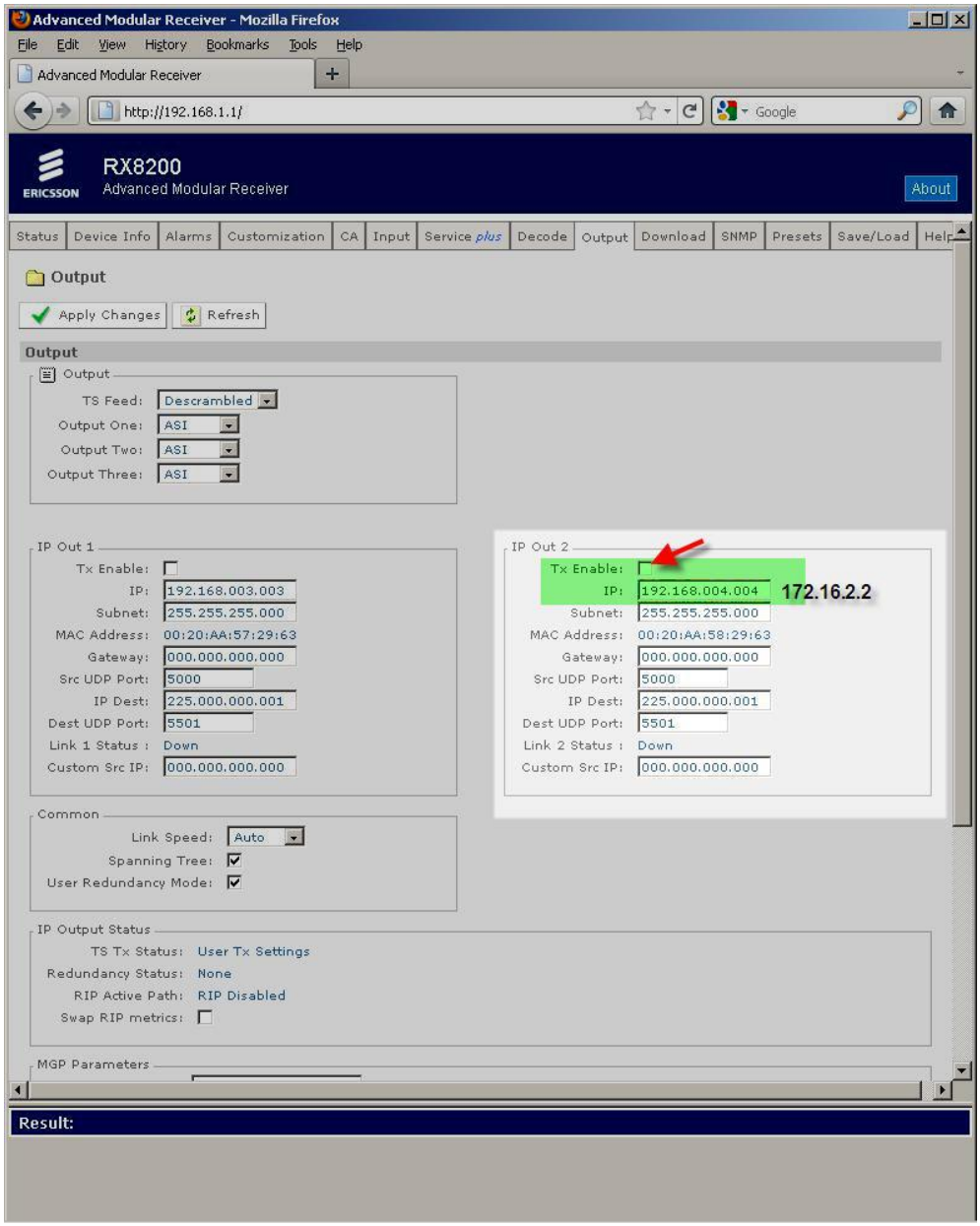


Figure 41. IP Output Interface 2 – Default Settings Shown

Once the IP address has been changed, ensure to select *Apply Changes* to store this new IP address.

The receiver should now be correctly configured for RLS and WNE IP data.

APPENDIX 3 TECHNICAL SPECIFICATION

RX8200 Technical Specifications.

3.1 PHYSICAL & POWER

- Dimensions: (W x D x H) 442.5 x 545 x 44mm (17.5“ x 20.7“ x 1.75“ approx.)
- Input Voltage: 110 VAC / 240 VAC
- Power Consumption 120W Max. (depending on options fitted)
- Rack height: 1 RU

3.2 CONTROL

- Front panel keypad and LCD
- SNMP control, traps and alarms
- Web browser
- IP High Speed Data: MPE based data de-encapsulation Max. bit-rate: 100 Mbps

3.3 SATELLITE INPUT OPTIONS

- Connector: 4x F-Type (F), 75 Ohm
- Modulation: DVB-S QPSK
- Receiving Frequency: 950 MHz – 2150 MHz
- Input level: -25 dBm to -65 dBm
- LNB Power: 13V, 18V or off, 22 kHz on/off
- FEC, DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8
- LNB Power: 13V, 18V or off, 22 kHz on/off

3.4 VIDEO DECODING OPTIONS

- 4:2:0 Decoding
- MPEG-2 SD Decode
- Profiles: MP@ML
- Max video rate: 15 Mbps (MP@ML)
- Video format: 480i and 576i 29.97, 25 fps

3.5 VIDEO OUTPUT OPTIONS

- SD Video Output Composite Video
  - Connector: 2x BNC (F) 75 Ohm
  - Format: PAL / NTSC
- SDI/DVB ASI-C (Switchable)
  - Connector: 2x BNC 75 ohms
  - SD-SDI standard: SMPTE 259M
  - Embedded Audio: SMPTE 272M (SD)
  - Embedded Audio

3.6 IP INPUT OPTIONS

- MPEG over Gigabit Ethernet IP Input
- Connector: 2 x RJ 45
- Format: 100/1000BaseT
- Max. input rate: 208Mbps

3.7 IP HIGH SPEED DATA

- MPE based data de-encapsulation
- Max. bit-rate: 100 Mbps

3.8 GLOSSARY OF ABBREVIATIONS

Abbreviation/Term	Description
C-Band	C Band is the original frequency allocation for communications satellites. C-Band uses 3.7-4.2GHz for downlink and 5.925-6.425Ghz for uplink.
DVB	Digital Video Broadcasting
FEC	Forward Error Correction is a system of error control for data transmission, wherein the sender adds redundant data (also known as an error correction code) to its messages.
GUI	Graphic User Interface
IFL	Generically, IFL (Intra-Facility Link) refers to a cable which runs between two facilities. In satellite usage, the term IFL refers to the cable which connects the ODU (Out-Door-Unit) with the IDU (In-Door-Unit).
IP/DVB	This is the phrase used to describe the delivery of IP content over a DVB satellite network.
K_u Band	The K_u band (pronounced "kay-yoo") is a portion of the electromagnetic spectrum within the microwave range of frequencies. K_u band is primarily used for satellite communications particularly from remote locations back to a television network's studio for editing and broadcasting.
LAN	Local Area Network
L-Band	L band is a frequency range between 390MHz and 1.55GHz which is used for satellite communications and for terrestrial communications between satellite equipment. An LNB is used to convert Ku and C Band frequency bands to L band, which can be transmitted over the IFL and processed by the IDU.
LNB	A low-noise block converter (LNB, for low-noise block, or sometimes LNC, for low-noise converter) is the (receiving, or downlink) antenna of a satellite dish commonly used for satellite TV reception.
LO	A device used to output the frequency of an incoming modulated radio-frequency carrier signal, to produce the required intermediate frequency.
MPEG	Motion Pictures Experts Group. Video file format.
NIC	Network Interface Card
PID	(Process IDentifier) A temporary number assigned to a process or service.
MPE	Multiprotocol Encapsulation, is a Data link layer protocol that provides a means to carry packet oriented protocols (like for instance IP) on top of MPEG transport stream (TS).
WNE	World News Express - IP file-based delivery system for Reuters news content.
RLS	Reuters Live Service - Linear-based delivery system for Reuters news content.

APPENDIX 4 RX8200 MULTIPLE WNE SERVER & DELL SERVER CONNECTION

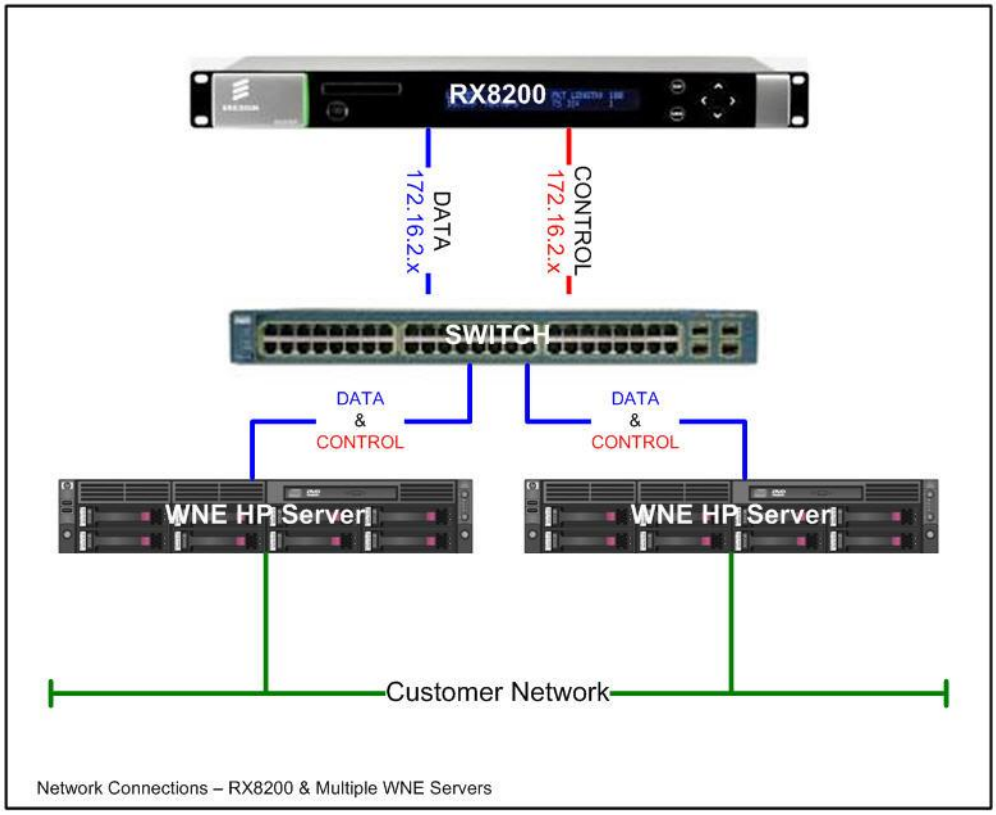


Figure 42 Mutliple WNE Servers with one RX8200 - Front.

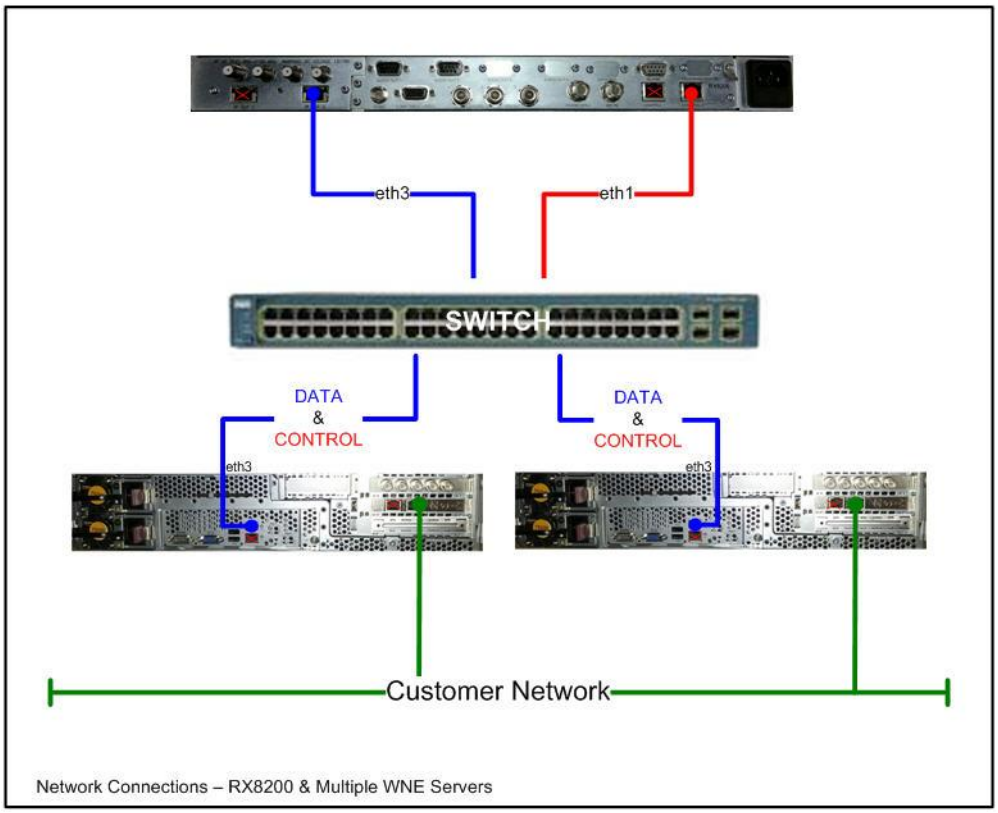


Figure 43. Mutliple WNE Servers with one RX8200 - Rear.

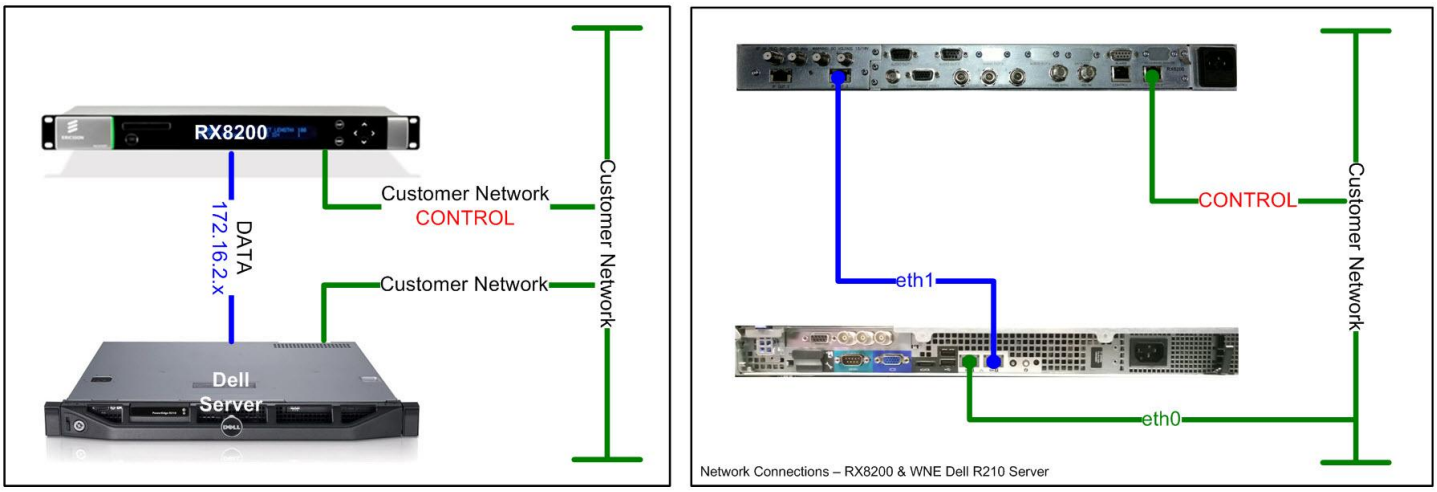


Figure 44. Dell R210 WNE Server with RX8200 – Customer Network Connection.

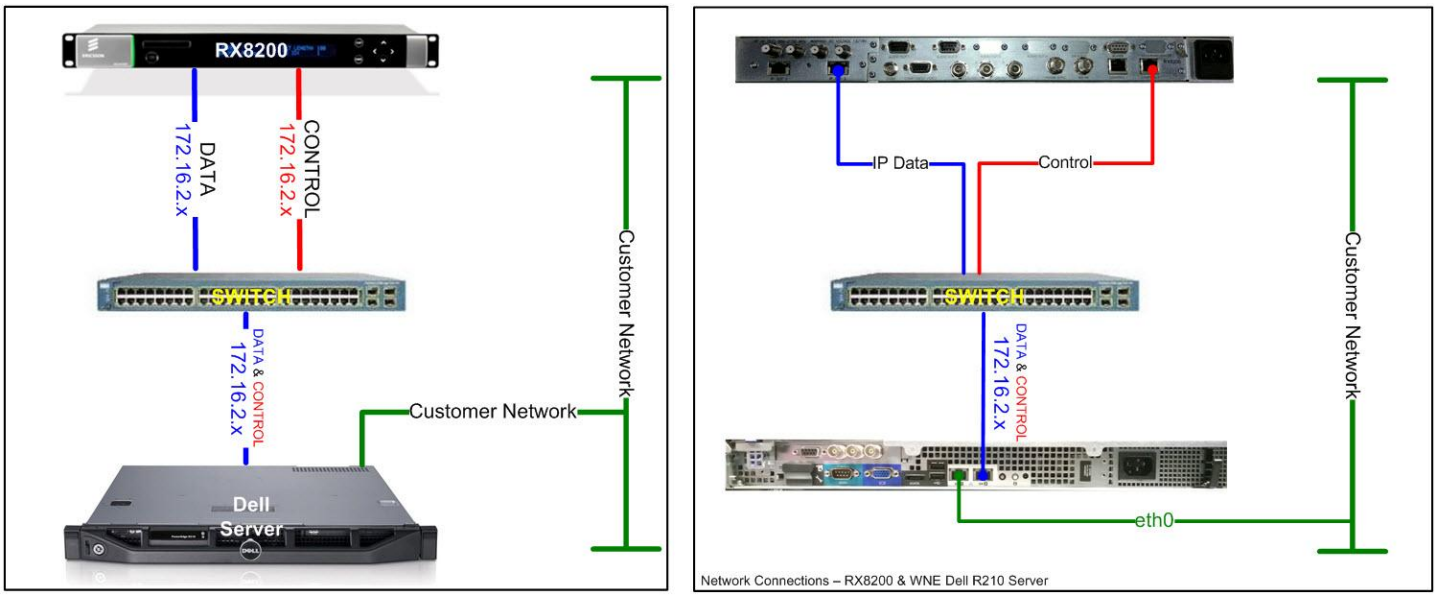


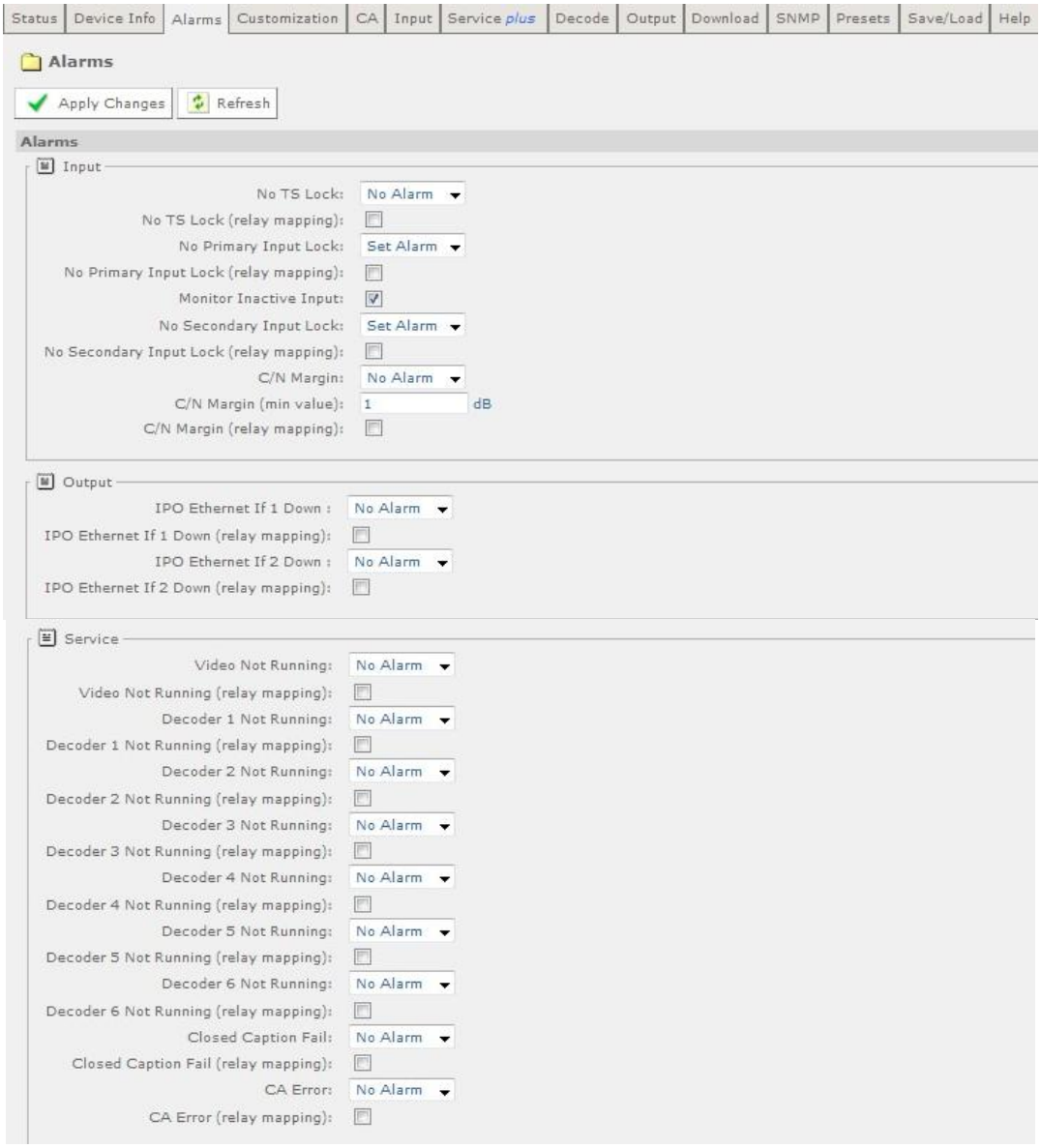
Figure 45. Dell R210 WNE Server with RX8200 – Switch Network Connection

APPENDIX 5 RX8200 ALARM

The alarms page provides access to the alarms settings for the receiver. To view this page, select the **Alarms** tab from the top of the RX8200 web page.

The content of this page is composed mainly of fields with drop-down menus which allow the setting or masking of various alarms and check boxes which can be used to activate relay mapping. Two of the alarm fields, namely C/N (Carrier-to-Noise) Margin and Over Temperature also have associated entry fields which allow the user to enter a value which, if exceeded, will activate the alarm.

Setting an alarm enables the alarm to be shown on the alarm LED, the alarm status displays and is recorded in the alarm log. Any changes which are made to the alarm settings shown may be confirmed by selecting the **Apply Changes** button. Selecting the **Refresh** button will ensure that the latest information is being displayed from the current values of the equipment.



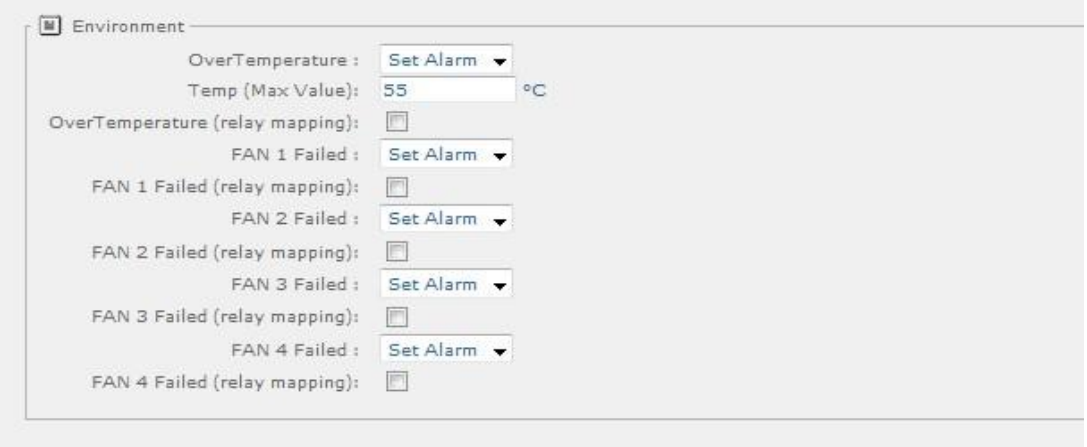


Figure 46 RX8200 Alarm Menu

Compatibility Vs Dynamic Mode Alarms

The current dynamic mode alarm functionality utilizes the next available incrementing identifier assigned at start-up. These identifiers will change depending on the cards present in the unit configuration. The compatibility mode setting allows pre-defined fixed identifiers to be assigned at startup. This in-turn allows the identifier of different units to be tracked through the external control system consistently

Input

- **No TS Lock** – Select the alarm condition from the drop-down menu to be activated when Transport Stream loses lock (Set Alarm /No Alarm).
- **No TS Lock (relay mapping)** – Place a check mark in the box to activate relay mapping for Transport Stream loss of lock alarm.
- **No Primary Input Lock** – Select the alarm condition from the drop-down menu to be activated when Primary Input loses lock (Set Alarm /No Alarm).
- **No Primary Input Lock (relay mapping)** – Place a check mark in the box to activate relay mapping for Primary Input loss of lock alarm.
- **Monitor Inactive Input** – Click to place a check mark in the box to activate an alarm when there is no signal present at the Primary Input .
- **No Secondary Input Lock** – Select the alarm condition from the drop-down menu to be activated when Secondary Input loses lock (Set Alarm /No Alarm).
- **No Secondary Input Lock (relay mapping)** – Place a check mark in the box to activate relay mapping for Secondary Input loss of lock alarm.
- **C/N Margin** – Select the alarm condition from the drop-down menu to be activated when the Carrier-to-Noise margin, set below, is exceeded (Set Alarm /No Alarm).
- **C/N Margin (min value)** – Enter the Carrier-to-Noise margin minimum value in decibels. This is used to trigger the alarm condition, set above, when exceeded.
- **C/N Margin (relay mapping)** – Place a check mark in the box to activate relay mapping for C/N Margin exceeded alarm.

Output

- **IPO Ethernet If 1/2 Down** – Select the alarm condition from the drop-down menu to be activated when there is no signal at IPO Ethernet 1/2 (Set Alarm /No Alarm).
- **IPO Ethernet If 1/2 Down (relay mapping)** – Place a check mark in the box to activate relay mapping for no signal at IPO Ethernet 1/2.

Service

- **Video Not Running** – Select the alarm condition from the drop-down menu to be activated when video is not running (Set Alarm /No Alarm).

- **Video Not Running (relay mapping)** – Place a check mark in the box to activate relay mapping for video not running.
- **Decoder 1/2/3/4/5/6** – Select the alarm condition from the drop-down menu to be activated when decoder 1/2/3/4/5/6 is not running (Set Alarm /No Alarm).
- **Decoder 1/2/3/4/5/6 (relay mapping)** – Place a check mark in the box to activate relay mapping for decoder 1/2/3/4/5/6 not running.
- **Closed Caption Fail** – Select the alarm condition from the drop-down menu to be activated when closed caption fails (Set Alarm /No Alarm).
- **Closed Caption Fail (relay mapping)** – Place a check mark in the box to activate relay mapping for closed caption fails.
- **CA Error** – Select the alarm condition from the drop-down menu to be activated when a Conditional Access error is detected (Set Alarm /No Alarm).
- **CA Error (relay mapping)** – Place a check mark in the box to activate relay mapping for Conditional Access error.

Environment

- **OverTemperature** – Select the alarm condition from the drop-down menu to be activated when an internal temperature value, set below, is exceeded (Set Alarm /No Alarm).
- **Temp (Max Value)** – Enter the maximum allowable internal temperature value (degrees Centigrade). This is used to trigger the alarm condition, set above, when exceeded.
- **OverTemperature (relay mapping)** – Place a check mark in the box to activate relay mapping for an overtemperature condition.
- **Fan 1/2/3/4 Failed** – Select the alarm condition from the drop-down menu to be activated when the fan speed is zero (Set Alarm /No Alarm).
- **Fan 1/2/3/4 Failed (relay mapping)** – Place a check mark in the box to activate relay mapping for fan 1/2/3/4 failure.

APPENDIX 6 FIRMWARE UPGRADE ON AN RX8200

This information is intended for internal Reuters engineers who wish to manually upgrade an RX8200 satellite decoder. Before attempting an upgrade, please ensure that the configuration procedure of an RX8200 is well understood. The procedure for upgrading the firmware on this receiver will not necessarily remove the configuration parameters of the unit, but you may wish to be familiar with how the unit should be configured before attempting such an upgrade.

Pre configuration files are written for specific firmware releases. If your RX8200 is NOT on the latest version of firmware, then please upgrade the firmware before applying the pre configuration file.

Upgrade Software

- A copy of the latest version of software for satellite decoders can be found on a WNE client that has been connected to a satellite feed for more than 24hrs under the following folder location: ***D:\Reuters_Engineering***.
- A copy of RX8200 firmware can also be found on The Hub.

Files contained within these locations will be of a format RX8200_x.x.x.zip, where x.x.x is the latest version of firmware. The files contained within this zip should contain the following files:

- vx.x.x.bin
- RX8000_x.x.x_external.pdf
- update1rx8000.bat
- updaterx8000.bat

Upgrade Procedure

1. Select the **About** tab on the top right hand side of the page and note the software Flash Bank that is currently in operation. You will see either (**Bank 1**) or (**Bank 0**).

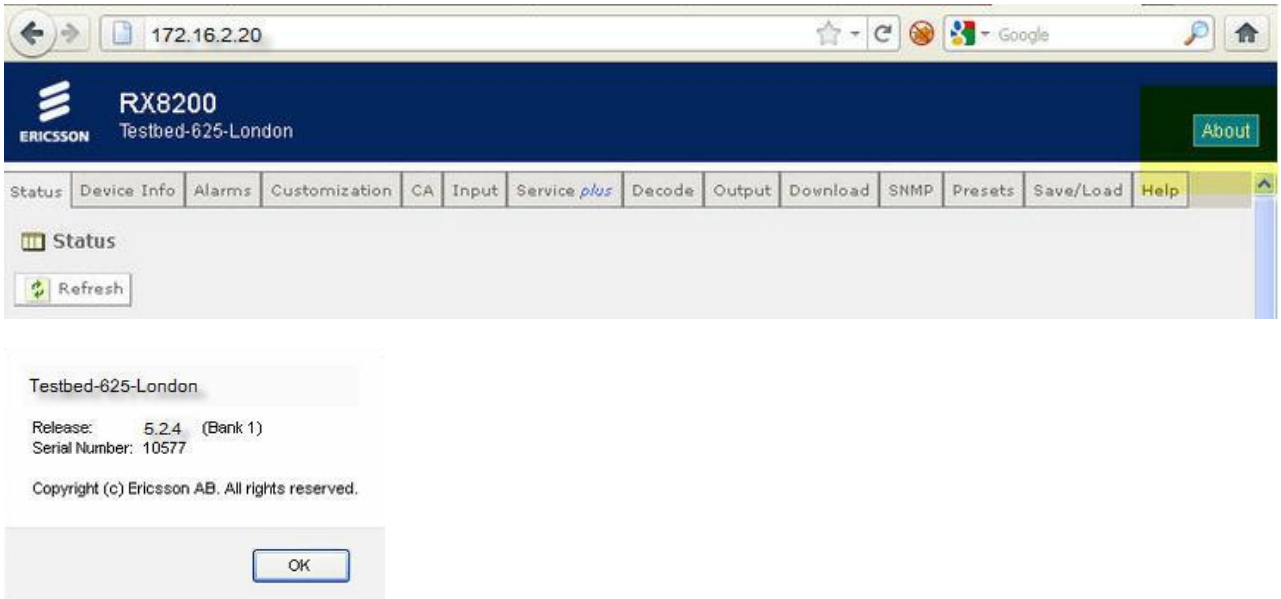


Figure 47. Checking Active Flash Bank.

2. Navigate to the **Save/Load** tab and scroll to the bottom of the page.

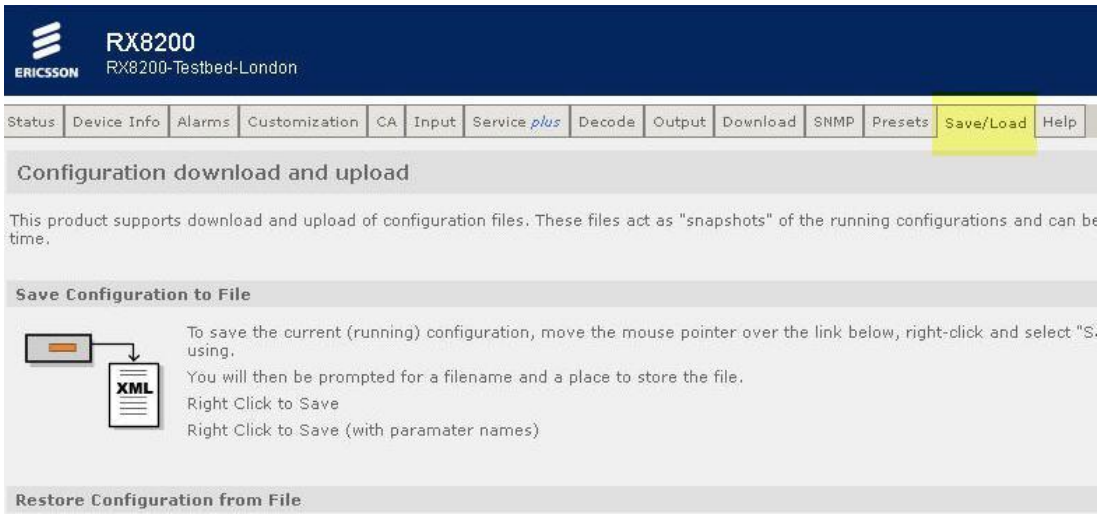


Figure 48. RX8200 Save/Load Tab.

3. In the example above, as the 'active' Flash Bank is 1 we want to install the upgraded firmware into the other Flash Bank (i.e. Bank 0) Scroll down this page until you locate the **Store New Software Application 0 File**. This will present us with the access route to Bank 0.

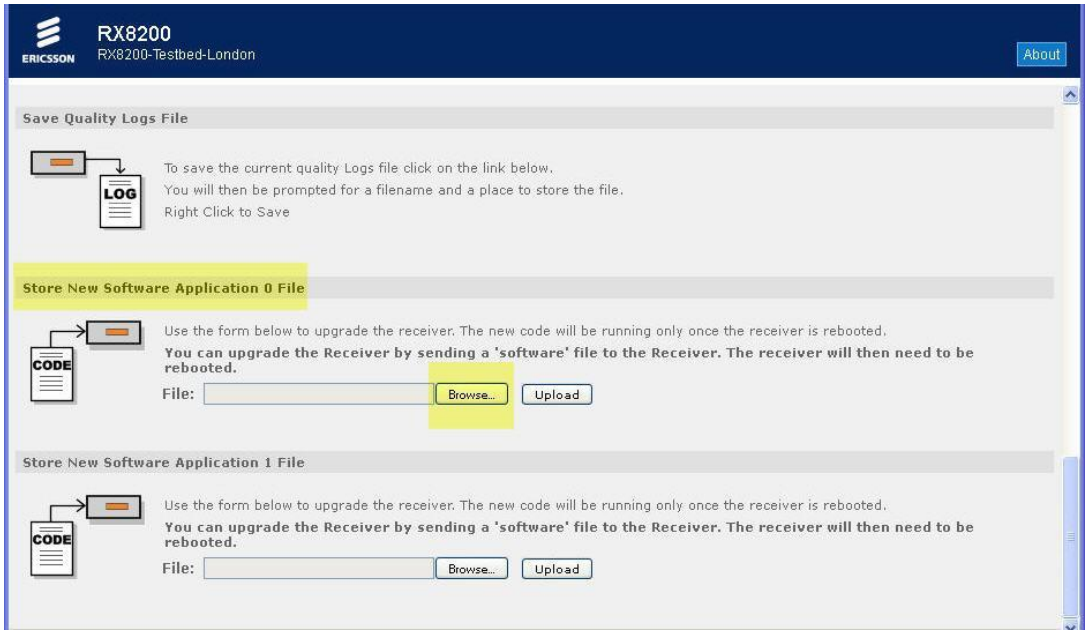

RX8200
RX8200-Testbed-London
About
Save Quality Logs File
To save the current quality Logs file click on the link below.
You will then be prompted for a filename and a place to store the file.
Right Click to Save
LOG
Store New Software Application 0 File
Use the form below to upgrade the receiver. The new code will be running only once the receiver is rebooted.
You can upgrade the Receiver by sending a 'software' file to the Receiver. The receiver will then need to be rebooted.
File:
Browse...
Upload
CODE
Store New Software Application 1 File
Use the form below to upgrade the receiver. The new code will be running only once the receiver is rebooted.
You can upgrade the Receiver by sending a 'software' file to the Receiver. The receiver will then need to be rebooted.
File:
Browse...
Upload
CODE

Figure 49. RX8200 Bank 0

4. Click on the Browser button and locate the firmware upgrade v**x.x.x**.bin file where ever it's stored on the connected WNE Server or on a USB memory key.

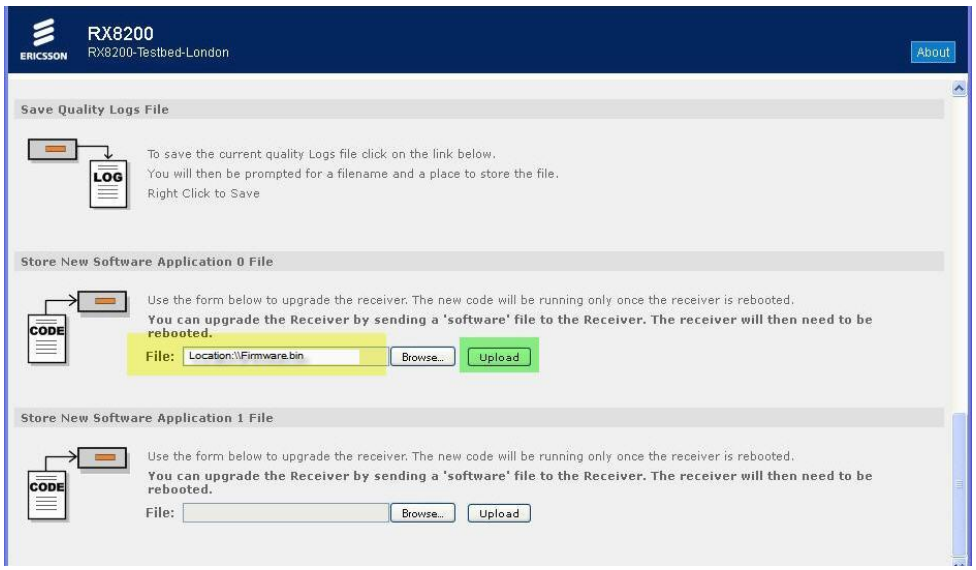

RX8200
RX8200-Testbed-London
About
Save Quality Logs File
To save the current quality Logs file click on the link below.
You will then be prompted for a filename and a place to store the file.
Right Click to Save
LOG
Store New Software Application 0 File
Use the form below to upgrade the receiver. The new code will be running only once the receiver is rebooted.
You can upgrade the Receiver by sending a 'software' file to the Receiver. The receiver will then need to be rebooted.
CODE
File:
Location:\\Firmware.bin
Browse...
Upload
Store New Software Application 1 File
Use the form below to upgrade the receiver. The new code will be running only once the receiver is rebooted.
You can upgrade the Receiver by sending a 'software' file to the Receiver. The receiver will then need to be rebooted.
CODE
File:
Browse...
Upload

Figure 50. RX8200 Bank 0 Firmware Upload.

5. Click on the upload button to apply the new firmware version.
6. Once the image has uploaded, you should briefly see a Green status in the **Result** window at the bottom of the browser page for a few seconds.
7. This confirms that the RX8200 has successfully loaded the new firmware into **Flash Bank 0**.
8. As the RX8200 was operating within **Flash Bank 1** when the upgrade started, a reboot is required to change into **Flash 0**. This is can be done in one of two ways:
    a. Reboot the receiver while at the same time holding down the left push button until the LCD displays that it has successfully cycled into the other flash bank.
    b. Via an FTP process to configure a switch between Flash Banks.

FTP Flash Bank Swap

1. Open a DOS window within Windows and type ftp 172.16.2.20 (i.e. the Mgmt Address of CONTROL 2).
2. The username and password for accessing the RX unit is *rx8000/rx8000*.
3. Once you are successfully into the receiver, the command to switch between flash banks is **quote site swap**.
4. Once you hit return after typing this command the receiver will automatically reboot into the alternative Flash Bank.

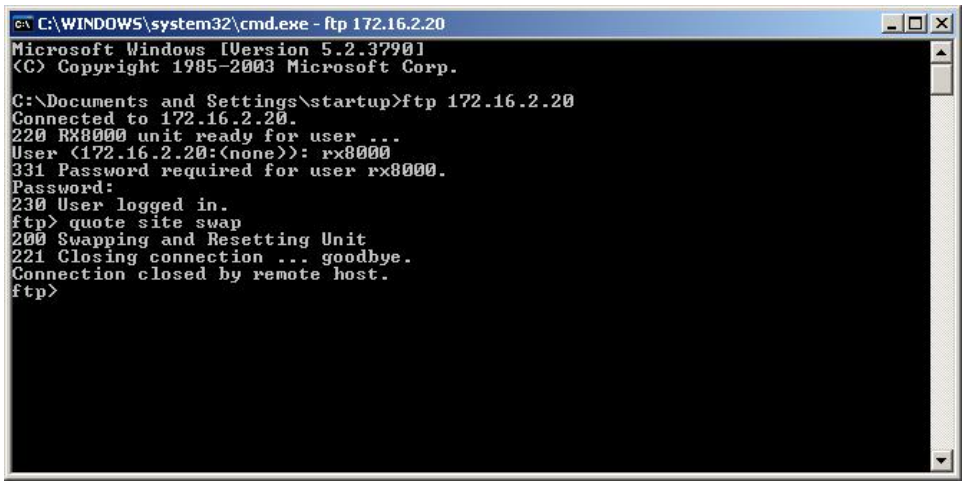

C:\WINDOWS\system32\cmd.exe - ftp 172.16.2.20
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.
C:\Documents and Settings\startup>ftp 172.16.2.20
Connected to 172.16.2.20.
220 RX8000 unit ready for user ...
User (172.16.2.20:(none)): rx8000
331 Password required for user rx8000.
Password:
230 User logged in.
ftp> quote site swap
200 Swapping and Resetting Unit
221 Closing connection ... goodbye.
Connection closed by remote host.
ftp>

Figure 51. RX8200 FTP Access

5. Close the BOS window and wait for the RX8200 unit to reboot.

APPENDIX 7 APPLYING A HD LICENSE KEY

As part of the RLS & WNE HD upgrade program, all RX8200 units must have the following 3 specific licenses enabled in order to for satellite lock and HD video reception to be available through the receiver. The enabled/disabled features on any RX8200 can be viewed through the *Customization* tab under *Licensed Features*.

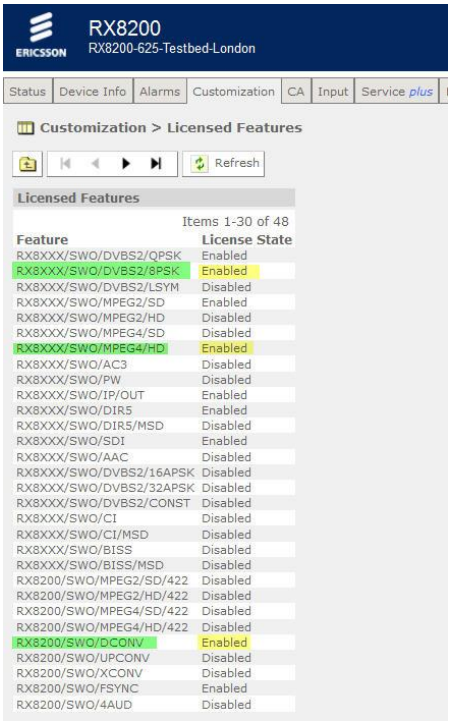


Figure 52. RX8200 Enabled Licensed Features

If these 3 features are not enabled on your RX8200 then you'll not be able to tune into new satellite signals for RLS and WNE. A list of licenses keys are available on The Reuters Hub.

- Each RX8200 has a unique key.
- Open the Hub link and search the document using the Serial Number of the RX unit or the Unique Hardware ID (called Serial Number) under the Customization tab.
- Copy and paste the appropriate License Key in the *Custom Key* filed under Parameters on the *Customization* tab.

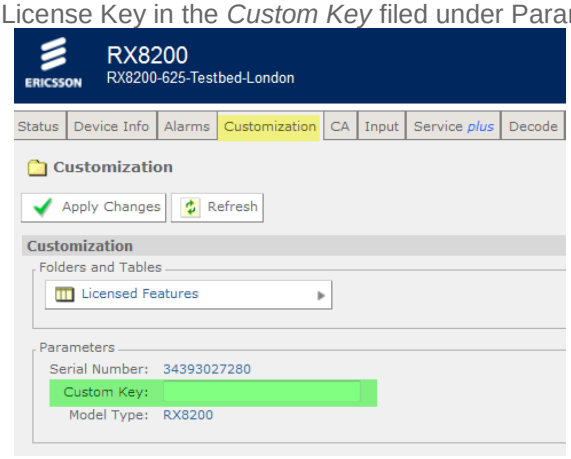


Figure 53. RX8200 Custom Key Field.

- Select *Apply Changes* for the key to be entered and then reboot the RX8200 for the key to become Enabled.
- A Video Tutorial if required can be found online (https://www.youtube.com/watch?feature=player_embedded&v=U6xf1PQMgY4)
- Following a reboot, a preconfiguration file can then be applied for a new satellite region successfully to lock the receiver to a signal automatically.

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